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VOL. XXXIX.

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OF

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FOR THE YEAR 1897.

WITH A LIST OF OFFICERS, FELLOWS, ETC.

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W. R. DAKIN, M.D., SENIOR SECRETARY,
AND
PERCY BOULTON, M.D.

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1870 WEST, CHARLES, M.D., F.R.C.P., Foreign Associate of the Academy of Medicine of Paris; 4, Evelyn mansions, Carlisle place, Victoria street, S.W. *Pres.* 1877-8.

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1866 LAZAREWITCH, J., M.D., Professor Emeritus and Physician to the Maximilian Hospital; Spaskaja, 2, St. Petersburg. *Trans.* 3.

1872 THOMAS, T. GAILLARD, M.D., Professor of Obstetrics in the College of Physicians and Surgeons; 600, Madison avenue, New York.

Elected

1862 VIRCHOW, RUDOLF, M.D., Professor of Pathological Anatomy in the University of Berlin.

1895 VON WINCKEL, Professor, Sonnenstrasse 16A, Munich.

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1876 BUDIN, P., M.D., 129, Boulevard St. Germain, Paris. *Trans.* 1.

1876 CHADWICK, JAMES R., M.A., M.D., Physician for Diseases of Women, Boston City Hospital; Clarendon street, Boston, Massachusetts, U.S.

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1898.

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1890 ADDINSELL, AUGUSTUS W., M.B., C.M.Edin., 30, Ashburn place, South Kensington, S.W. *Council*, 1898.

1895† ALBRECHT, JOHN ADOLPH, L.R.C.P. & S.Edin., 343, The Cliff, Lower Broughton road, Manchester.

1893† ALCOCK, RICHARD, M.B., Burlington crescent, Goole.

1883*†ALLAN, ROBERT JOHN, L.R.C.P.Ed., The Bungalow, Dulwich hill, Sydney, New South Wales.

1890† ALLAN, THOMAS S., L.R.C.P. & S.Ed., Fairfield House, Falkirk.

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1892 Campbell, John William, B.A., M.B., B.Ch.Cantab., Highclere, Oakleigh park, Whetstone, N. (*Winter*, Casa Rossa, Mentone.)

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1887† Case, William, Denmark house, Caister-on-Sea, Norfolk.

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1894 Chaldecott, John Henry, L.R.C.P.Lond., 401, Old Kent road, S.E.

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1867*†Charles, T. Edmondstoune, M.D., F.R.C.P., 72, Via di San Niccolò da Tolentino, Rome. *Council*, 1882-4.

1874*†Charlesworth, James, M.D., Physician to the North Staffordshire Infirmary; 25, Birch terrace, Hanley, Staffordshire.

1892† Chepmell, Charles William James, M.D. Brux., 87, Buckingham road, Brighton.

1890† Childe, Charles Plumley, B.A., F.R.C.S., Cranleigh, Kent road, Southsea.

1897† Chinery, Edward Fluder, F.R.C.S.Edin., Monmouth House, Lymington, Hants.

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1859 CLAREMONT, CLAUDE CLARKE, Millbrook House, 1, Hampstead road, N.W. *Council*, 1896.

1897 CLARK, WILLIAM GLADSTONE, M.A.Cantab., St. Bartholomew's Hospital, E.C.

1893 CLARKE, W. BRUCE, F.R.C.S., 51, Harley street, W.

1889 CLEMOW, ARTHUR HENRY WEISS, M.D., C.M. Edin., 101, Earl's Court road, Kensington, W.

O.F. CLEVELAND, WILLIAM FREDERICK, M.D., Stuart villa, 199, Maida vale, W. *Council*, 1863-4. *Vice-Pres.* 1875-7, 1887-9. *Trans.* 1.

1865*†COATES, CHARLES, M.D., Physician to the Bath General and Royal United Hospitals; 10, Circus, Bath.

1882† COATES, FREDERICK WILLIAM, M.D., Auckland, New Zealand. *Council*, 1891-3.

1875 COFFIN, RICHARD JAS. MAITLAND, F.R.C.P. Ed., 3, Westgate terrace, Redcliffe square, S.W.

1875*†COLE, RICHARD BEVERLY, M.D. Jefferson Coll. Philad., 218, Post street, San Francisco, California, U.S.

1895† COLES, ALFRED CHARLES, M.D., C.M.Edin., Rivoli, Grosvenor road, Bournemouth.

1897† COLES, RICHARD A., M.B. & Ch.Aber., Corsley, Warminster, Wiltshire.

1895 COLLIER, SAMUEL RUDDELL, M.D., 13, Hartfield road, Wimbledon.

1888† COLLINS, EDWARD TENISON, 12, Windsor place, Cardiff.

1866† COOMBS, JAMES, M.D., Bedford.

Elected

1888 Cooper, Peter, L.R.C.P.Lond., Stainton Lodge, 35, Shooter's Hill road, Blackheath, S.E.

1890 Copeland, William Henry Laurence, M.B.Cantab., 59, Warwick road, Earl's Court, S.W.

1888† Corby, Henry, B.A., M.D., 19, St. Patrick's place, Cork.

1875*†Cordes, Aug., M.D., M.R.C.P., Consulting Accoucheur to the "Miséricorde;" Privat Docent for Midwifery at the University of Geneva; 12, Rue Bellot, Geneva. *Trans.* 1.

1883 Corner, Cursham, 113, Mile End road, E.

1886† Cox, Joshua John, M.D. Ed., St. Ronan's, Clarendon road, Eccles, Manchester.

1877 Crawford, James, M.D. Durh., Grosvenor Mansions, 80, Victoria street, S.W.

1896† Creasy, Rolf, L.R.C.P. Lond., Windlesham, Surrey.

1876† Crew, John, Manor House, Higham Ferrers, Northamptonshire.

1893 Cripps, William Harrison, F.R.C.S., 2, Stratford place. W. *Trans.* 1.

1889† Croft, Edward Octavius, L.R.C.P. Lond., 8, Clarendon road, Leeds.

1881*†Cronk, Herbert George, M.B. Cantab., Repton, near Burton-on-Trent.

1893 Crosby, Herbert Thomas, M.A., M.B., B.C.Cantab. 19, Gordon square, W.C.

1895 Cross, Ernest, L.R.C.P.Lond., The Limes, Wallwood Park, Leytonstone.

1886*†Cross, William Joseph, M.B., Horsham, Victoria, Australia

Elected

1875* Cullingworth, Charles James, M.D., D.C.L., F.R.C.P., Obstetric Physician to, and Lecturer on Obstetric Medicine at, St. Thomas's Hospital; 14, Manchester square, W. *Council*, 1883-5, 1891-3. *Vice-Pres.* 1886-8. *Board Exam. Midwives*, 1889-91. *Chairman*, 1895-6. *Pres.* 1897-8. *Trans.* 12.

1889*† Cursetji, Jehángir J., M.D. Brux., 94, Chundunwádi, Bombay.

1894 Cutler, Lennard, L.R.C.P.Lond., 8, Gloucester road, S.W. *Trans.* 1.

1885 Dakin, William Radford, M.D., B.S., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, St. George's Hospital; 18, Grosvenor street, W. *Council*, 1889-91. *Hon. Lib.* 1892-3. *Hon. Sec.* 1894-7. *Vice-Pres.* 1898. *Trans.* 3.

1868 Daly, Frederick Henry, M.D., 185, Amhurst road, Hackney Downs, N.E. *Council*, 1877-9. *Vice-Pres.* 1883-5. *Trans.* 2.

1882† Dambrill-Davies, William R., Alderley Edge, Cheshire.

1893 Dauber, John Henry, M.A. Oxon., L.R.C.P. Lond., 29, Charles street, Berkeley square, W.

1892† Davis, Robert, Darrickwood, Orpington, Kent.

1895 Davoren, John, L.R.C.P.I., C.M., 1, Wilmington square, W.C.

1877 Davson, Smith Houston, M.D., Campden villa, 203, Maida vale, W. *Council*, 1889-91.

1891 Dawson, Ernest, L.R.C.P.Lond., Linden House, High road, Leyton, E.

1889 Des Vœux, Harold A., M.D.Brux., 8, James street, Buckingham gate, S.W. *Council*, 1896-8.

1894 Dickinson, Thomas Vincent, M.D. Lond., 33, Sloane street, S.W.

1894 Dickson, John William, B.A., M.B., B.C. Cantab., 3, Hertford street, W.

Elected

1895 DODGSON, GEORGE STANLEY, B.A., M.B., B.C.Cantab., Middlesex Hospital, W.

1886† DONALD, ARCHIBALD, M.D. Edin., M.R.C.P., Obstetric Physician to the Royal Infirmary, Manchester; Honorary Surgeon to St. Mary's Hospital for Women, Manchester; Platt Abbey, Rusholme, Manchester. *Council*, 1893-5. *Trans.* 1.

1879* DORAN, ALBAN H. G., F.R.C.S., Surgeon to the Samaritan Free Hospital; 9, Granville place, Portman square, W. *Council*, 1883-5. *Hon. Lib.* 1886-7. *Hon. Sec.* 1888-91. *Vice-Pres.* 1892-4. *Trans.* 17.

1890† DOUTY, EDWARD HENRY, M.A., M.B., B.C. Cantab., 69, Bridge street, Cambridge.

1887 DOVASTON, MILWARD EDMUND, Hova House, Hove, Brighton.

1896 DOWNES, J. LOCKHART, M.B., C.M. Edin., 27, Romford road, E.

1884† DOYLE, E. A. GAYNES, L.R.C.P., Colonial Hospital, Port of Spain, Trinidad.

1871† DRAKE-BROCKMAN, EDWARD FORSTER, F.R.C S., L.R.C.P. Lond., Brigade-Surgeon; c/o Messrs. Richardson and Co., East India Army Agency, 25, Suffolk street, Pall Mall, S.W.]

1884 DRAKE, CHARLES HENRY, 204, Brixton hill, S.W.

1894† DREW, HENRY WILLIAM, F.R.C.S., Eastgate, East Croydon.

1883 DUNCAN, ALEXANDER GEORGE, M.B., 25, Amhurst park, Stamford hill, N.

O.F. DUNCAN, JAMES, M.B., 8, Henrietta street, Covent garden, W.C. *Council*, 1873-4. *Vice-Pres.* 1895.

1882 DUNCAN, WILLIAM, M.D., Obstetric Physician to, and Lecturer on Obstetric Medicine at, the Middlesex Hospital; 6, Harley street, W. *Council*, 1885-6, 1888-9. *Hon. Lib.* 1890-1. *Hon. Sec.* 1892-5. *Vice-Pres.* 1896-8. *Trans.* 2.

Elected

1893† Dunn, Philip Henry, L.R.C.P. Lond., Stevenage, Herts.

1871* Eastes, George, M.B., F.R.C.S., 35, Gloucester terrace, Hyde park, W. *Council*, 1878-80.

1896 Easton, Frank Edward, L.R.C.P. Lond., 12, Devonport street, Hyde park, W.

1883† Eccles, F. Richard, M.D., Professor of Gynæcology, Western University; 1, Ellwood place, Queen's avenue, London, Ontario, Canada.

1893 Eden, Thomas Watts, M.D., M.R.C.P. Edin., 6, Manchester square, W. *Council*, 1897-8. *Trans.* 3.

1890† Ehrmann, Albert, L.R.C.P.Lond., Bitterne, near Southampton.

1879† Elder, George, M.D., C.M., Surgeon to the Samaritan Hospital for Women, Nottingham; 17, Regent street, Nottingham.

1878† Ellery, Richard, L.R.C.P. Ed., Plympton, Devon.

1894 Ellis, Robert Kingdon, M.B., B.Ch.Oxon., Westgate, Peterborough.

1873*†Engelmann, George Julius, A.M., M.D., 336, Beacon street, Boston, Mass., U.S.A.

1897 Evans, Evan Laming, M.B., B.C.Cantab., 11, Gloucester terrace, Hyde park, W.

1892† Evans, John Morgan, L.R.C.P.Lond., Llandrindod Wells, Radnorshire.

1875† Ewart, John Henry, Eastney, Devonshire place, Eastbourne.

1894 Fairweather, David, M.A., M.B., C.M.Edin., 2, Nightingale road, Wood Green, N.

1876† Farncombe, Richard, 40, Belgrave street, Balsall heath, Birmingham.

1861 Farr, Geo. F., L.R.C.P. Ed., Slade House, 175, Kennington road, S.E. *Council*, 1885.

Elected

1882† Farrar, Joseph, M.D., Gainsborough. *Trans.* 1.

1894† Fazan, Charles Herbert, L.R.C.P. Lond., Belmont, Wadhurst, Sussex.

1868* Fegan, Richard, M.D., Westcombe park, Blackheath, S.E.

1886 Fennell, David, L.K.Q.C.P.I., 20, Dalston lane, N.E.

1883 Fenton, Hugh, M.D., 27, George street, Hanover square, W.

1893 Ferguson, George Gunnis, M.B., C.M.Glas., 62, Holmdale road, West Hampstead, N.W.

1893† Finley, Harry, M.D.Lond., Wimborne Minster, Dorset.

1892† Finny, W. Evelyn St. Lawrence, M.B. Dubl., Kenlis, Queen's road, Kingston hill.

1882† Fitzgerald, Charles Egerton, M.D., West terrace, Folkestone.

1877*†Fonmartin, Henry de, M.D., 26, Newberry terrace, Lower Bullar street, Nichols Town, Southampton.

1884† Ford, Alexander, L.R.C.P.Ed., 9, Beresford street, Waterford.

1877*†Ford, James, M.D., Rillside, Exmouth, Devon.

1897† Fothergill, W. E., M.B., C.M.Edin., 200, Oxford road, Manchester.

1884 Fouracre, Robert Perriman, 20, Tollington park, N.

1886† Fowler, Charles Owen, M.D., Cotford House, Thornton heath.

1875*†Fraser, Angus, M.D., Physician and Lecturer on Clinical Medicine to the Aberdeen Royal Infirmary; 232, Union street, Aberdeen. *Council*, 1897-8.

1888† Fraser, James Alexander, L.R.C.P. Lond., Western Lodge, Romford.

1883 Fuller, Henry Roxburgh, M.D. Cantab., 45, Curzon street, Mayfair, W. *Council*, 1893. *Trans.* 1.

1886† Furner, Willoughby, F.R.C.S., 13, Brunswick square, Brighton. *Council*, 1894-6. *Hon. Loc. Sec.*

Elected

1874* Galabin, Alfred Lewis, M.A., M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, Guy's Hospital; 49, Wimpole street, Cavendish square, W. *Council*, 1876-8. *Hon. Lib.* 1879. *Hon. Sec.* 1880-3. *Vice-Pres.* 1884. *Treas.* 1885-8. *Pres.* 1889-90. *Trans.* 12.

1888 Galloway, Arthur Wilton, L.R.C.P. Lond., 79, New North road, N.

1863* Galton, John H., M.D., Chunam, Sylvan road, Upper Norwood, S.E. *Council*, 1874-6, 1891-2. *Vice-Pres.* 1895-8.

1881 Gandy, William, Hill Top, Central hill, Norwood, S.E. *Council*, 1897-8.

1886*† Garde, Henry Croker, F.R.C.S. Edin., Maryborough, Queensland.

1887 Gardiner, Bruce H. J., L.R.C.P. Ed., Gloucester House, Barry road, East Dulwich, S.E.

1894 Gardner, H. Bellamy, M.R.C.S., L.R.C.P.Lond., 11a, Welbeck street, W.

1879† Gardner, John Twiname, Northfield House, Ilfracombe.

1872*† Gardner, William, M.A., M.D., Professor of Gynæcology, McGill University; Gynæcologist to the Royal Victoria Hospital; 109, Union avenue, Montreal, Canada.

1876† Garner, John, 21, Easy row, Birmingham.

1891† Garrett, Arthur Edward, L.R.C.S., & L.M.Ed., The Limes, Rickmansworth.

1873*† Garton, William, M.D., F.R.C.S., Inglewood, Aughton, near Ormskirk.

1889* Gell, Henry Willingham, M.A., M.B. Oxon., 43, Albion street, Hyde park, W.

1859* Gervis, Henry, M.D., F.R.C.P., Consulting Obstetric Physician to St. Thomas's Hospital; 40, Harley street, Cavendish square. *Council*, 1864-6, 1889-91, 1893. *Hon. Sec.* 1867-70. *Vice-Pres.* 1871-3. *Treas.* 1878-81. *Pres.* 1883-4. *Trans.* 8.

Elected

1866* GERVIS, FREDERICK HEUDEBOURCK, 1, Fellows road, Haverstock hill, N.W. *Council*, 1877-9. *Vice-Pres.* 1892. *Trans.* 1.

1884† GIBB, CHARLES JOHN, M.D., Westgate House, Newcastle-on-Tyne.

1875 GIBBINGS, ALFRED THOMAS, M.D., 93, Richmond road, Dalston, N.E. *Council*, 1885-6, 1888.

1883* GIBBONS, ROBERT ALEXANDER, M.D., Physician to the Grosvenor Hospital for Women and Children; 29, Cadogan place, S.W. *Council*, 1889-90. *Trans.* 1.

1894 GIBSON, HENRY WILKES, L.R.C.P. Lond., 11, College crescent, South Hampstead, N.W.

1874† GIBSON, JAMES EDWARD, Hillside, West Cowes, Isle of Wight.

1892 GILES, ARTHUR EDWARD, M.D. Lond., M.R.C.P., Physician to Out-patients, Chelsea Hospital for Women; 37, Queen Anne street, Cavendish square, W. *Council*, 1898. *Trans.* 7.

1869 GILL, WILLIAM, L.R.C.P. Lond., 11, Russell square, W.C.

1891 GIMBLETT, WILLIAM HENRY, L.R.C.P.I., 53, Park crescent, North Shields.

1894† GODDARD, CHARLES ERNEST, L.R.C.P. Lond., Wembley, Harrow.

1871 GODDARD, EUGENE, M.D. Durh., North Lynne, 106, Highbury New Park, N. *Trans.* 1.

1871 *GODSON, CLEMENT, M.D., C.M.; 9, Grosvenor street, W. *Council*, 1876-7. *Hon. Sec.* 1878-81. *Vice-Pres.* 1882-4. *Board Exam. Midwives*, 1877, 1882-86. *Trans.* 5.

1893† GOODMAN, ROGER NEVILLE, M.A., M.B.Cantab., Elmside, Kingston-on-Thames.

1893† GORDON, FREDERICK WILLIAM, L.R.C.P.Lond., Manukau road, Auckland, New Zealand.

1883 GORDON, JOHN, M.D., 20, Wickham road, Brockley, S.E.

1869† GOSS, TREGENNA BIDDULPH, 1, The Circus, Bath. *Hon. Loc. Sec.*

Elected

1891† Gostling, William Ayton, M.D., B.S.Lond., Barningham, West Worthing.

1889 Goullet, Charles Arthur, L.R.C.P.Lond., 2, Finchley road, N.W.

1890 Gow, William John, M.D.Lond., Physician-Accoucheur in charge of Out-patients, St. Mary's Hospital; 27, Weymouth street, W. *Council*, 1893-5. *Trans.* 2.

1893† Gowan, Bowie Campbell, L.R.C.P.Lond., Raven Dene, Great Stanmore.

1893 Grant, Leonard, M.D.Edin., 9, Western villas, New Southgate, N.

1897 Grant-Wilson, Charles Westbrooke, L.R.C.P.Lond., Heathfield House, Streatham common.

1890† Gray, Harry St. Clair, M.D. Glas., 25, Lynedoch street, Glasgow.

1875† Gray, James, M.D., 15, Newton terrace, Glasgow.

1890 Green, Charles David, M.D.Lond., Addison House, Upper Edmonton.

1894† Green, Charles Robert Mortimer, Surgeon-Captain, The Eden Hospital, Calcutta.

1887 Greenwood, Edwin Climson, L.R.C.P., 19, St. John's wood park, N.W.

1863 *Griffith, G. de Gorrequer, 34, St. George's square, S.W. *Trans.* 2.

1879* Griffith, Walter Spencer Anderson, M.D. Cantab., F.R.C.S., F.R.C.P., Assistant Physician-Accoucheur to St. Bartholomew's Hospital; 96, Harley street, W. *Council*, 1886-8, 1893-5. *Hon. Lib.*, 1896-7. *Board Exam. Midwives*, 1887-9. *Trans.* 9.

1870 *Grigg, William Chapman, M.D., Physician to the In-patients, Queen Charlotte's Lying-in Hospital; 27, Curzon street, Mayfair. *Council*, 1875-7. *Board Exam. Midwives*, 1878-9.

1888*†Grimsdale, Thomas Babington, B.A., M.B. Cantab., 50, Rodney street, Liverpool.

Elected

1882† Gripper, Walter, M.B. Cantab., The Poplars, Wallington, Surrey.

1880 Grogono, Walter Atkins, Berwick House, Broadway, Stratford, E.

1896† Groves, Ernest W., L.R.C.P. Lond., Ford House, Chewton Mendip, Bath.

1892 Gubb, Alfred Samuel, M.D. Paris, 29, Gower street, W.C.

1887† Hackney, John, M.D. St. And., Oaklands, Hythe.

1881† Hair, James, M.D., Brinklow, Coventry.

1889 Hale, Charles D. B., M.D., 3, Sussex place, Hyde park, W.

1880 Hames, George Henry, F.R.C.S., 29, Hertford street, Park lane, W.

1894 Hamilton, Bruce, L.R.C.P. Lond., "Falklands," 9, Frognal, N.W.

1894† Hamilton, David Livingston, L.R.C.P. Edin., 260, Oxford road, Manchester.

1887† Hamilton, John, F.R.C.S.Ed., Beechhurst House, Swadlincote, Burton-on-Trent.

1883 Handfield-Jones, Montagu, M.D. Lond., M.R.C.P., Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women at, St. Mary's Hospital; 35, Cavendish square, W. *Council*, 1887-9, 1896-7. *Board Exam. Midwives*, 1894-6. *Trans.* 1.

1889† Hardwick, Arthur, M.D. Durh., Newquay, Cornwall.

1886† Hardy, Henry L. P., Holly Lodge, Richmond road, Kingston-on-Thames.

1892 Harold, John, L.R.C.P. Lond., 91, Harley street, W.

1889 Harper, Charles John, L.R.C.P. Lond., Church end, Finchley, N.

1877 Harper, Gerald S., M.B. Aber., 40, Curzon street, Mayfair, W. *Council*, 1894-5.

1878† Harries, Thomas Davies, F.R.C.S., Grosvenor House, Aberystwith, Cardiganshire.

Elected

1867* HARRIS, WILLIAM H., M.D., 32, Cambridge gardens, W.

1880* HARRISON, RICHARD CHARLTON, 19, Uxbridge road, Ealing, W.

1890† HART, DAVID BERRY, M.D.Edin., 29, Charlotte square, Edinburgh.

1886† HARTLEY, HORACE, L.R.C.P. Ed., Stone, Staffordshire.

1886 HARTLEY, REGINALD, M.D. Durh., F.R.C.S.Ed., 112, Westbourne grove, W.

1894 HARTZHORNE, BERNARD FRED., M.R.C.S., Blenheim Lodge, High road, Chiswick.

1893† HARVEY, JOHN JORDAN, L.R.C.P. & S.Edin., 54, Barking road, Canning Town, E.

1880 HARVEY, JOHN STEPHENSON SELWYN, M.D.Durh., M.R.C.P., 1, Astwood road, Cromwell road, S.W.

1865† HARVEY, ROBERT, M.D., Abbottabad, Punjab. [Per Messrs. Cochran and Macpherson, 152, Union street, Aberdeen.] *Trans.* 1.

1892† HAWKINS-AMBLER, GEORGE ARTHUR, F.R.C.S.Ed., 35, Rodney street, Liverpool.

1888† HAYCOCK, HENRY EDWARD, L.R.C.P.Ed., Ironville House, Alfreton, Derbyshire.

1893† HAYDON, THOMAS HORATIO, M.B., B.C. Cantab., 22, High street, Marlborough.

1873 HAYES, THOMAS CRAWFORD, M.A., M.D., F.R.C.P., Obstetric Physician to King's College Hospital, and Lecturer on Practical Midwifery at King's College; 17, Clarges street, Piccadilly, W. *Council*, 1876-8. *Vice-Pres.* 1890-1.

1880 HEATH, WILLIAM LENTON, M.D., 90, Cromwell road, Queen's gate, S.W. *Council*, 1891. *Trans.* 1.

Elected

1892† HELLIER, JOHN BENJAMIN, M.D.Lond., Lecturer on Diseases of Women and Children, Yorkshire College; Surgeon to the Hospital for Women and Children, Leeds; 1, De Grey terrace, Leeds.

1890† HELME, T. ARTHUR, M.D.Edin., 258, Oxford road, Manchester.

1867† HEMBROUGH, JOHN WILLIAM, M.D., The Moot Hall, Newcastle-on-Tyne.

1876* HERMAN, GEORGE ERNEST, M.B., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital; 20, Harley street, Cavendish square, W. *Council*, 1878-9, 1898. *Hon. Lib.* 1880-1. *Hon. Sec.* 1882-5. *Vice-Pres.* 1886-7. *Board Exam. Midwives*, 1886-8. *Treas.* 1889-92. *Pres.* 1893-4. *Trans.* 29.

1892† HILLS, THOMAS HYDE, L.R.C.P. Lond., 7, St. Peter's terrace, Cambridge.

1886† HODGES, HERBERT CHAMNEY, L.R.C.P.Lond., Watton, Herts. *Trans.* 1.

1886† HOLBERTON, HENRY NELSON, L.R.C.P. Lond., East Molesey.

1875 HOLLINGS, EDWIN, M.D., 22, Endsleigh gardens, N.W. *Council*, 1888-90. *Vice-Pres.* 1893-4.

1897 HOLLINGS, GUY BERTRAM, M.B., B.S., 22, Endsleigh gardens, N.W.

1859 HOLMAN, CONSTANTINE, M.D., 26, Gloucester place, Portman square, W. *Council*, 1867-9, 1895-6. *Vice-Pres.* 1870-1.

1891† HOLMAN, ROBERT COLGATE, Whithorne House, Midhurst, Sussex.

1864* HOOD, WHARTON PETER, M.D., 11, Seymour street, Portman square, W.

1896† HOPKINS, GEORGE HERBERT, F.R.C.S., 3, North Quay, Brisbane, Queensland.

1884 HOPKINS, JOHN, L.R.C.P.Ed., Hamlet Court road, West Cliff, Southend-on-Sea.

Elected

1883* Horrocks, Peter, M.D., F.R.C.P. Lond., Assistant Obstetric Physician to, and Demonstrator of Practical Obstetrics at, Guy's Hospital; 45, Brook street, W. *Council*, 1886-7. *Hon. Lib.* 1888-9. *Hon. Sec.* 1890-3. *Vice-Pres.* 1894-6. *Trans.* 2.

1876 Horsman, Godfrey Charles, 22, King street, Portman square, W.

1893† Hosker, James Atkinson, Kirkleatham, Boscombe, Bournemouth.

1883 Hoskin, Theophilus, L.R.C.P. Lond., 1, Amhurst park, N.

1883 Houchin, Edmund King, L.R.C.P. Ed., 23, High street, Stepney, E.

1884† Hough, Charles Henry, Full street, Derby.

1877* Howell, Horace Sydney, M.D., East Grove House, 18, Boundary road, St. John's Wood, N.W.

1879† Hubbard, Thomas Wells, Barming place, Maidstone.

1889† Humphrys, Charles Beyer, L.R.C.P. & S. Edin., Eagle House, Blandford, Dorset.

1884*†Hurry, Jamieson Boyd, M.D. Cantab., 43, Castle street, Reading. *Council*, 1887-9. *Vice.-Pres.* 1897-8. *Trans.* 2.

1878† Husband, Walter Edward, Ebor Lodge, Higher Broughton, Manchester.

1895 Huxley, Henry, L.R.C.P.Lond., 39, Leinster gardens, Hyde park, W.

1894† Ilott, Herbert James, M.D. Aber., 57, High street, Bromley, Kent.

1883† Inman, Robert Edward, Gadshill Cottage, Higham, Kent.

1884† Irwin, John Arthur, M.A., M.D., 14, West Twenty-ninth street, New York.

1883† Jackson, George Henry, Ashburton, Carew road, Eastbourne.

1897 Jäger, Harold, M.B. Lond., 6, Darnley road, Royal crescent, W.

Elected

1873† Jakins, William Vosper, L.R.C.P. Ed., 14, Collins street East, Melbourne.

1872† Jalland, Robert, Horncastle, Lincolnshire. *Trans.* 1.

1890† James, Charles Henry, L.R.C.P.Lond., Surg. Indian Army; Lahore, India.

1895† James, Stanlake, Violet hill, Simla, India.

1883*†Jenkins, Edward Johnstone, M.D. Oxon., 213, Macquarie street, Sydney.

1877† Jenks, Edward W., M.D., 84, Lafayette avenue, Detroit, Michigan, U.S.

1882 Jennings, Charles Egerton, M.D. Durh., F.R.C.S. Eng., Assistant Surgeon to the North-West London Hospital; 48, Seymour street, Portman square, W.

1877† Johnson, Samuel, M.D., 5, Hill street, Stoke-upon-Trent.

1881 Johnston, Joseph, M.D., 24, St. John's Wood park, N.W. *Council*, 1891-2.

1894 Johnstone, R. W., M.D., B.Ch., 1, Walton place, S.W.

1868† Jones, Evan, Ty-Mawr, Aberdare, Glamorganshire. *Council*, 1886-8. *Vice.-Pres.* 1890-1. *Hon. Loc. Sec.*

1894 Jones, Evan, L.R.C.P. Lond., 89, Goswell road, E.C.

1895† Jones, George Horatio, Deddington, Oxon.

1878 Jones, H. Macnaughton, M.D., F.R.C.S.I. and Edin., 141, Harley street, Cavendish square, W. *Trans.* 1.

1881† Jones, James Robert, M.B., 247, Donald street, Winnipeg, Manitoba, Canada.

1894† Jones, John Arnallt, L.R.C.P. Lond., Heathmont, Aberavon, Port Talbot, Glamorganshire.

1887† Jones, J. Talfourd, M.B. Lond., Consulting Physician to the Breconshire Infirmary, Rose Bank, South terrace, Eastbourne.

1886 Jones, Lewis, M.D., Oakmead, Balham, S.W.

1885† Jones, P. Sydney, M.D., 16, College street, Hyde park, Sydney. [Per Messrs. D. Jones and Co., 122 and 124, Wool Exchange, Basinghall street, E.C.]

Elected

1873† Jones, Philip W., River House, Enfield.

1886† Jones, William Owen, The Downs, Bowdon, Manchester.

1879† Joubert, Charles Henry, M.B. Lond., F.R.C.S. Eng., Surgeon-Major, Bengal Medical Department; Obstetric Physician to Eden Hospital, and Professor of Midwifery and Diseases of Women and Children, Calcutta Medical College; 6, Harington street, Calcutta.

1878† Judson, Thomas Robert, L.R.C.P. Lond., 44, Mill lane, West Derby, Liverpool.

1890 Kanthack, Alfredo Antunes, M.D.Lond., Pathological Laboratory, New Museums, Cambridge. *Council*, 1897.

1884 Keates, William Cooper, L.R.C.P., 22, East Dulwich road, S.E.

1880† Kebbell, Alfred, Flaxton, York.

1883† Keeling, James Hurd, M.D., 267, Glossop road, Sheffield. *Hon. Loc. Sec.*

1896 Keep, Arthur Corrie, M.D., C.M.Edin., 7, Lower Seymour street, Portman square, W.

1890 Keith, Skene, M.B., C.M.Edin., 42, Charles street, Berkeley Square, W.

1894 Kellett, Alfred Featherstone, M.B., B.C.Cantab., 142, Lewisham road, S.E.

1874* Kempster, William Henry, M.D., Chesterfield, Clapham common, North side, S.W.

1886 Kennedy, Alfred Edmund, L.R.C.P. Ed., Chesterton House, Plaistow, E.

1879 Ker, Hugh Richard, L.R.C.P.Ed., Tintern, 2, Balham hill, S.W.

1895† Kerr, John Martin Munro, M.B., C.M.Glasg., 28, Berkeley terrace, Glasgow.

1872 Kerr, Norman S., M.D., F.L.S., 1, Hamilton terrace, Regent's park, N.W.

Elected

1877*†Kerswill, John Bedford, M.R.C.P. Ed., Fairfield, St. German's, Cornwall.

1878† Khory, Rustonjee Naserwanjee, M.D., M.R.C.P., Medical Syndic, Bombay University; Honorary Physician, Bai Motlibai Obstetric and Gynæcological Hospital; Hormazd Villa, Khumballa hill, Bombay.

O.F.* Kiallmark, Henry Walter, 5, Pembridge gardens, Bayswater. *Council*, 1879-80.

1895† King, Arthur, M.B., C.M., Station road, Watford.

1892† Kingscote, Ernest, M.B., C.M.Edin., 31, Lower Seymour street, Portman square, W.

1872* Kisch, Albert, 61, Portsdown road, W. *Council*, 1896-7.

1876† Knott, Charles, M.R.C.P. Ed., Liz Ville, Elm grove, Southsea.

1889 Lake, George Robert, 177, Gloucester terrace, Hyde park, W.

1867* Langford, Charles P., Sunnyside, Hornsey lane, N.

1875† Lawrence, Alfred Edward Aust, M.D., Physician-Accoucheur to the Bristol General Hospital; 19, Richmond hill, Clifton, Bristol. *Council*, 1885-6, 1888. *Vice-Pres.*, 1889-90. *Hon. Loc. Sec. Trans.* 1.

1894† Lea, Arnold W. W., M.D., B.S.Lond., F.R.C.S., 274, Oxford road, Manchester. *Trans.* 1.

1894† Leahy, Albert William Denis, M.D. Durh., F.R.C.S., 6, Elysium road, Calcutta.

1884*†Lediard, Henry Ambrose, M.D., 35, Lowther street, Carlisle. *Council*, 1890-2. *Trans.* 1.

1894† Lee, Sidney Herbert, B.A., M.B., B.C.Cantab., The Moat, Thame, Oxon.

1897 Leslie, William Murray, M.D. Edin., 67, Grosvenor street, W.

1885 Lewers, Arthur H. N., M.D. Lond., M.R.C.P., Obstetric Physician to the London Hospital; 72, Harley street, W. *Council*, 1887-9, 1893. *Board Exam. Midwives* 1895-7. *Trans.* 10.

Elected

1885† Lidiard, Sydney Robert, M.D., Park View House, Falmouth.

1875† Liebman, Carlo, M.D. Vienna, Principal Surgeon, Trieste Civil Hospital, Trieste, Austria. *Trans.* 1.

1894 Livermore, William Leppingwell, L.R.C.P. Lond., 52, Stapleton Hall road, Stroud green, N.

1872*†Lock, John Griffith, M.A., 2, Rock terrace, Tenby.

1893† Logan, Roderic Robert Walter, Church street, Ashby-de-la-Zouch.

1859† Lombe, Thomas Robert, M.D., Bemerton, Torquay.

1894† Loos, William Christopher, L.R.C.P. Lond., c/o Union Steamship Co., Ltd., Southampton.

1890 Low, Harold, M.B.Cantab., 10, Evelyn gardens, South Kensington.

1893† Lowe, Walter George, M.D. Lond., F.R.C.S., Burton-on-Trent.

1878*†Lycett, John Allan, M.D., Gatcombe, Surgeon to the Wolverhampton and District Hospital for Women, Wolverhampton.

1896† Lyons, A., M.B., Thames Ditton.

1871† McCallum, Duncan Campbell, M.D., Emeritus Professor, McGill University; 45, Union avenue, Montreal, Canada. *Trans.* 4.

1890 McCann, Frederick John, M.D., C.M.Edin., M.R.C.P., Physician to Out-patients at the Samaritan Hospital; 5, Curzon street, Mayfair, W. *Council*, 1897-8. *Trans.* 3.

1894† McCausland, Albert Stanley, M.D. Brux., Church Hill House, Swanage.

1890 McCaw, John Dysart, M.D., F.R.C.S., Ivy House, Lincoln road, East Finchley, N. *Council*, 1898.

1894† McDonnell, Æneas John, M.D., Ch.M. Sydney, Toowoomba, Queensland.

1896 M'Donnell, W. Campbell, L.R.C.P. Lond., Park House, Park lane, Stoke Newington, N.

Elected

1896 MACGREGOR, PATRICK FRASER, M.B., 24, Addison gardens, W.

1892† MCKAY, W. J. STEWART, M.B., M.Ch.Sydney, Australian Club, Macquarie street, Sydney, N.S.W.

1897† MCKERRON, ROBERT GORDON, M.B. Aberd., 1, Albyn place, Aberdeen.

1894† MCKISACK, HENRY LAWRENCE, M.D.Dubl., 15, College square east, Belfast.

1893 MACLEAN, EWEN JOHN, M.D., C.M.Edin., 23, Henrietta street, Cavendish square, W.

1886 MCMULLEN, WILLIAM, L.K.Q.C.P.I., 319A, Brixton road, S.W.

1894† MCOSCAR, JOHN, L.R.C.P. Lond., Stoneleigh, Watlington, Oxon.

1895† MAIDLOW, WILLIAM HARVEY, M.D.Durh., F.R.C.S.Eng., Elm Lodge, Park Hill Rise, Croydon.

1884 MALCOLM, JOHN D., M.B., C.M., Surgeon to the Samaritan Free Hospital; 13, Portman street, W. *Council*, 1894-6.

1871† MALINS, EDWARD, M.D., Obstetric Physician to the General Hospital, Professor of Midwifery at Mason College, Birmingham; 50, Newhall street, Birmingham. *Council*, 1881-3. *Vice-Pres.* 1884-6. *Hon. Loc. Sec.*

1868*†MARCH, HENRY COLLEY, M.D., Portisham, Dorchester. *Council*, 1890-2.

1887 MARK, LEONARD P., L.R.C.P. Lond., 61, Cambridge street, Hyde-park square, W.

1860† MARLEY, HENRY FREDERICK, The Nook, Padstow, Cornwall.

1862*†MARRIOTT, ROBERT BUCHANAN, Swaffham, Norfolk.

1887† MARSH, O. E. BULWER, L.R.C.P. Ed., Parkdale, Clytha park, Newport, Monmouthshire.

1890† MARTIN, CHRISTOPHER, M.B., C.M.Edin., 35, George road, Edgbaston, Birmingham. *Trans.* 1.

Elected

1897 MATHEW, GEORGE PORTER, M.B., B.C. Cantab., Queen Charlotte's Hospital, N.W.

1883† MAURICE, OLIVER CALLEY, 75, London street, Reading. *Council*, 1888-90.

1890 MAY, CHICHESTER GOULD, M.A., M.D.Cantab., Assistant Physician to the Grosvenor Hospital for Women and Children; 26, Walton street, Pont street, S.W.

1884† MAYNARD, EDWARD CHARLES, L.R.C.P.Ed., Leslie villa, The Vineyard, Richmond.

1885† MELLER, CHARLES BOOTH, L.R.C.P. Ed., Cowbridge, Glamorganshire.

1886 MENNELL, ZEBULON, 1, Royal crescent, Notting hill, W.

1882 MEREDITH, WILLIAM APPLETON, M.B., C.M., F.R.C.S.Eng., Surgeon to the Samaritan Free Hospital for Women and Children; 21, Manchester Square, W. *Council*, 1886-8. *Vice-Pres.* 1891-3. *Trans.* 3.

1893 MESQUITA, S. BUENO DE, M.D., B.S.Lond., 1, Highbury New park, N.

1893† MICHIE, HARRY, M.B. Aber., 27, Regent street, Nottingham.

1875*†MILES, ABIJAH J., M.D., Professor of Diseases of Women and Children in the Cincinnati College of Medicine, Cincinnati, Ohio, U.S.

1895† MILLER, JAMES THOMAS ROGER, Castlegate House, Malton, Yorkshire.

1876* MILLMAN, THOMAS, M.D., 59, Yonge street, Toronto, Ontario, Canada.

1880† MILLS, ROBERT JAMES, M.B., M.C., 35, Surrey street, Norwich.

1876 MILSON, RICHARD HENRY, M.D., 88, Finchley road, South Hampstead, N.W. *Council*, 1890.

1892† MILTON, HERBERT M. NELSON, Kasr-el-Aini Hospital, Cairo, Egypt.

Elected

1869*†Minns, Pembroke R. J. B., M.D., Thetford, Norfolk.

1867* Mitchell, Robert Nathal, M.D., 27, Fitzjohn's Avenue, N.W.

1894† Mondelet, William Henry, M.D., 1, Gladstone terrace, Brighton.

1893† Montbrun, D. Antonio de, L.R.C.P. Lond., Port of Spain, Trinidad, W.I.

1877 Moon, Frederick, M.B., Bexley house, Greenwich, S.E.

1859† Moorhead, John, M.D., Surgeon to the Weymouth Infirmary and Dispensary; Weymouth, Dorset.

1888 Morison, Alexander, M.D. Ed., 14, Upper Berkeley street, Portman square, W.

1895 Morison, Henry Bannermann, M.B. Durh., 18, Holland park avenue, W.

1890 Morris, Charles Arthur, M.A., M.B., B.C.Cantab., F.R.C.S., 29, Eccleston street, Eaton square, S.W.

1883 Morris, Clarke Kelly, Gordon Lodge, Charlton road, Blackheath, S.E.

1893 Morrison, James, L.R.C.P. Lond., St. Bartholomew's Hospital, E.C.

1893† Morse, Thomas Herbert, F.R.C.S., 10, Upper Surrey street, Norwich. *Trans.* 1.

1891 Mortlock, Charles, L.R.C.P. Lond., 27, Oxford square, Hyde park, W.

1886† Morton, Shadforth, M.D. Durham, 24, Wellesley road, Croydon.

1896 Mugford, Sidney Arthur, L.R.C.P., 135, Kennington park road, S.E.

1893 Muir, Robert Douglas, M.D., 286, New Cross road, S.E.

1896† Murphy, James Keogh, L.R.C.P., 35, Princes square, Bayswater, W.

1885 Murray, Charles Stormont, L.R.C.S. and L.M. Ed., 85, Gloucester place, Portman square, W.

Elected

1893† MURRAY, ROBERT MILNE, M.B. Edin., 11, Chester street, Edinburgh.

O.F. MUSGRAVE, JOHNSON THOMAS, L.R.C.P. Ed., 10, College terrace, Belsize park, N.W. *Council*, 1859-60. *Trans.* 1.

1888 MYDDELTON-GAVEY, EDWARD HERBERT, 124, Harley street, W.

1893† NAIRNE, JOHN STUART, F.R.C.S. Ed., 141, Hill street, Garnethill, Glasgow.

1897† NANAVATTY, BYRAMGI HORMAYI, L.M. & S. Bomb., B. J. School of Medicine, Ahmedabad, Bombay Presidency.

1887 NAPIER, A. D. LEITH, M.D. Aber., M.R.C.P. Lond., F.R.S.Edin., North terrace, East Adelaide, South Australia. *Trans.* 2.

1896† NARIMAN, R. T., M.D. Brux., Parsi Lying-in Hospital, Bombay.

1892† NASH, W. GIFFORD, F.R.C.S., 36, St. Peter's, Bedford.

1859† NEAL, JAMES, M.D., Parterre, Sandown, Isle of Wight.

1882† NESHAM, THOMAS CARGILL, M.D., Lecturer on Midwifery in the University of Durham College of Medicine at Newcastle-on-Tyne; 12, Ellison place, Newcastle-on-Tyne. *Council*, 1889-91. *Vice-Pres.* 1895-7.

1859*†NEWMAN, WILLIAM, M.D., Surgeon to the Stamford and Rutland Infirmary; Barn Hill House, Stamford, Lincolnshire. *Council*, 1873-5. *Vice-Pres.* 1876-7. *Trans.* 5.

1889† NEWNHAM, WILLIAM HARRY CHRISTOPHER, M.A., M.B. Cantab., Chandos Villa, Queen's road, Clifton, Bristol.

1895† NEWSTEAD, JAMES, 9, York place, Clifton, Bristol.

1893† NICHOL, FRANK EDWARD, M.A., M.B., B.C. Cantab., 11, Ethelbert Terrace, Margate.

1873† NICHOLSON, ARTHUR, M.B. Lond., 30, Brunswick square, Brighton. *Council*, 1897-8.

Elected

1894 Nicholson, Edgar, M.R.C.S., 42, Portland road, Notting hill, W.

1879† Nicholson, Emilius Rowley, M.D., 19, Cornwallis gardens, Hastings.

1894 Nicoll, Thomas Vere, L.R.C.P., M.R.C.S., 147, Cromwell road, South Kensington.

1876* Nix, Edward James, M.D., 11, Weymouth street, W. *Council*, 1889-90.

1882† Norman, John Edward, Lismore House, Hebburn-on-Tyne.

1894 O'Callaghan, Robert Thomas Alexander, F.R.C.S.I., 137, Harley street, W.

1886 Ogle, Arthur Wesley, L.R.C.P. Lond., 90, Cannon street, E.C.

1895† Ogle, John Gilbert, M.D.Oxon., Reigate, Surrey.

O.F.† Oldham, Henry, M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital; Cannington, Boscombe, Bournemouth. *Vice-Pres.* 1859. *Council*, 1860, 1865-6. *Treas.* 1861-2. *Pres.* 1863-4. *Trans.* 1. *Trustee.*

1888 Oliver, Franklin Hewitt, L.R.C.P. Lond., 2, Kingsland road, N.E.

1890† Osburn, Harold Burgess, L.R.C.P., Bagshot, Surrey.

1877† Osterloh, Paul Rudolph, M.D. Leipzic, Physician for Diseases of Women, Diaconissen Hospital; 16, Sidonienstr., Dresden.

1892 Owen, Samuel Walshe, L.R.C.P.Lond., 10, Shepherd's Bush road, W.

1889* Page, Harry Marmaduke, M.D.Brux., F.R.C.S., 107, London wall, E.C.

1891† Page, Herbert Markant, M.D.Brux., 16, Prospect hill, Redditch.

1883 Palmer, John Irwin, 132, Harley street, Cavendish square, W.

Elected

1877* PARAMORE, RICHARD, M.D., 2, Gordon square, W.C.

1867*†PARKS, JOHN, Bank House, Manchester road, Bury, Lancashire.

1887 PARSONS, JOHN INGLIS, M.D.Durh., M.R.C.P., Physician to Out Patients, Chelsea Hospital for Women, 3, Queen street, Mayfair, W. *Trans.* 2.

1880 PARSONS, SIDNEY, 78, Kensington Park road, W.

1865*†PATERSON, JAMES, M.D., Hayburn Bank, Partick, Glasgow.

1882* PEACEY, WILLIAM, M.D., Rydal Mount, St. John's road, Eastbourne.

1894 PEAKE, SOLOMON, M.R.C.S., 118, Percy road, Shepherd's Bush, W.

1864 PEARSON, DAVID RITCHIE, M.D., 23, Upper Phillimore place, Kensington, W. *Council*, 1895.

1871* PEDLER, GEORGE HENRY, 6, Trevor terrace, Rutland gate, S.W. *Council*, 1897-8.

1880*†PEDLEY, THOMAS FRANKLIN, M.D., Rangoon, India. *Trans.* 1.

1881† PERIGAL, ARTHUR, M.D., New Barnet, Herts. *Council*, 1892–3.

1893 PERKINS, GEORGE C. STEELE, M.D., 85, Wimpole street, W.

1871† PERRIGO, JAMES, M.D., 826, Sherbrooke street, Montreal, Canada. *Hon. Loc. Sec.*

1879*†PESIKAKA, HORMASJI DOSABHAI, 23, Hornby row, Bombay.

1883 PETTIFER, EDMUND HENRY, 32, Stoke Newington green, N.

1894 PETTY, DAVID, M.B., C.M.,Edin., 6, High road, South Tottenham, N.E.

1879 PHILLIPS, GEORGE RICHARD TURNER, 28, Palace court, Bayswater hill, W. *Council*, 1891.

1882 PHILLIPS, JOHN, M.A., M.D. Cantab., F.R.C.P., Assistant Obstetric Physician to King's College Hospital; 68, Brook street, W. *Council*, 1887-9, 1893. *Hon. Lib.* 1894-5. *Hon. Sec.* 1896-8. *Board Exam. Midwives*, 1892-4. *Trans.* 9.

Elected

1897 PHILLIPS, LLEWELLYN C. P., M.B., B.C. Cantab., St. Bartholomew's Hospital, E.C.

1878 PHILPOT, JOSEPH HENRY, M.D., 61, Chester square, S.W. *Council*, 1891.

1889† PINHORN, RICHARD, L.R.C.P. Lond., 5, Cambridge terrace, Dover. *Council*, 1897-8.

1889† PLAYFAIR, DAVID THOMSON, M.D., C.M. Edin., Redwood House, Bromley, Kent.

1893 PLAYFAIR, HUGH JAMES MOON, M.D. Lond., 9, Cliveden place, Eaton square, S.W.

1864* PLAYFAIR, W. S., M.D., LL.D., F.R.C.P., Physician-Accoucheur to H.I. & R.H. the Duchess of Edinburgh; Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital, 38, Grosvenor street, W. *Council*, 1867, 1883-5. *Hon. Librarian*, 1868-9. *Hon. Sec.* 1870-72. *Vice-Pres.* 1873-5. *Pres.* 1879-80. *Trans.* 15.

1880 POCOCK, FREDERICK ERNEST, M.D., The Limes, St. Mark's road, Notting hill, W.

1891 POLLOCK, WILLIAM RIVERS, M.B., B.C.Cantab., Assistant Obstetric Physician to the Westminster Hospital, 56, Park street, Grosvenor square, W. *Council*, 1895-7. *Board Exam. Midwives*, 1898.

1876 POPE, H. CAMPBELL, M.D., F.R.C.S., Broomsgrove Villa, 280, Goldhawk road, Shepherd's Bush, W.

1891† POPE, HENRY SHARLAND, M.B., B.C.Cantab., Castle Bailey, Bridgwater.

1888 POPHAM, ROBERT BROOKS, M.R.C.P. Edin., L.R.C.P.Lond., Endyon, 242, Camden road, N.W.

1864* POTTER, JOHN BAPTISTE, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women at, the Westminster Hospital; 20, George street, Hanover square, W. *Council*, 1872-6, 1890-2. *Hon. Lib.* 1877-8. *Vice-Pres.* 1879-81. *Treas.* 1882-4, 1893-7. *Board Exam. Midwives*, 1883-4. *Pres.* 1885-6. *Trans.* 1. *Trustee.*

Elected

1894† POUND, CLEMENT, L.R.C.P. Lond., High street, Odiham, Hants.

1893 POWELL, HERBERT EDWARD, Glenarm House, Upper Clapton, N.E.

1884† POWELL, JOHN JAMES, L.R.C.P. Lond., Norwood Lodge, Weybridge.

1885† PRAEGER, EMIL ARNOLD, Rooms 56—57, Potomac Block, Broadway, Los Angeles, Cal.

1886 PRANGLEY, HENRY JOHN, L.R.C.P. Lond., Tudor House, 197, Anerley road, Anerley, S.E.

1893† PRATT, WILLIAM SUTTON, M.D., Alma House, Rugby.

1880* PRICKETT, MARMADUKE, M.A.Cantab., M.D., Physician to the Samaritan Hospital; 27, Oxford square, W. *Council*, 1892.

1895 PRIESTLEY, R. C., M.A., M.B.Cantab., 81, Linden gardens, Bayswater, W.

O.F.* PRIESTLEY, SIR WILLIAM O., M.D., LL.D., F.R.C.P., Consulting Obstetric Physician to King's College Hospital; 17, Hertford street, Mayfair, W. *Council*, 1859-61, 1865-6. *Vice-Pres.* 1867-9. *Pres.* 1875-6. *Trans.* 6.

1893 PROBYN-WILLIAMS, ROBERT JAMES, M.D.Durh., 22, Duke street, Portland place. *Trans.* 1.

1876*†QUIRKE, JOSEPH, L.R.C.P. Ed., The Oaklands, Hunter's road, Handsworth, Birmingham.

1878† RAWLINGS, JOHN ADAMS, M.R.C.P.Ed., Preswylfa, Swansea.

1897 RAWLINGS, J. D., M.B.Lond., 184, Belsize road, Hampstead, N.W.

1870* RAY, EDWARD REYNOLDS, Dulwich, S.E.

1894† RAYNER, HERBERT EDWARD, F.R.C.S., Harcourt House, Camberley, Surrey.

1860* RAYNER, JOHN, M.D., Swaledale House, Highbury quadrant, N.

Elected

1879 READ, THOMAS LAURENCE, 11, Petersham terrace, Queen's gate, S.W. *Council*, 1892.

1879† REID, WILLIAM LOUDON, M.D., Professor of Midwifery and Diseases of Women and Children, Anderson's College; Physician to the Glasgow Maternity Hospital; 7, Royal crescent, Glasgow.

1889 REMFRY, LEONARD, M.A., M.D., B.C. Cantab., Assistant Obstetric Physician to, and Assistant Lecturer on Obstetric Medicine at, St. George's Hospital; 60, Great Cumberland place, Hyde park, W. *Council*, 1894-6. *Board Exam. Midwives*, 1897-8. *Trans.* 4.

1893† RENSHAW, ISRAEL JAMES EDWARD, F.R.C.S.Edin., Gorse Lea, Sale, near Manchester.

1875*†REY, EUGENIO, M.D., 39, Via Cavour, Turin.

1890 REYNOLDS, JOHN, M.D.Brux., 11, Brixton hill, S.W.

1872† RICHARDSON, WILLIAM L., M.D., A.M., Professor of Obstetrics in Harvard University; Physician to the Boston Lying-in Hospital; 225, Commonwealth avenue, Boston, Massachusetts, U.S.

1889† RICHMOND, THOMAS, L.R.C.P. Ed., 2, West garden street, Glasgow.

1872† RIGDEN, GEORGE, Surgeon to the Canterbury Dispensary; 60, Burgate street, Canterbury. *Trans.* 1. *Hon. Loc. Sec.*

1871* RIGDEN, WALTER, M.D. St. And., 16, Thurloe place, S.W. *Council*, 1882-3. *Trans.* 1.

1892 ROBERTS, CHARLES HUBERT, M.D.Lond., F.R.C.S. Eng., M.R.C.P., Physician to Out-patients to the Samaritan Free Hospital, and Demonstrator of Practical Midwifery at St. Bartholomew's Hospital; 21, Welbeck street, Cavendish square, W. *Council*, 1897-8. *Trans.* 1.

O.F.*† ROBERTS, DAVID LLOYD, M.D., F.R.C.P., F.R.S. Edin., Obstetric Physician to the Manchester Royal Infirmary; and Lecturer on Clinical Midwifery and the Diseases of Women in Owens College; 11, St. John street, Deansgate, Manchester. *Council*, 1868-70, 1880-2. *Vice-Pres.* 1871-2. *Trans.* 5.

Elected

1867* Roberts, David W., M.D., 56, Manchester street, Manchester square, W.

1890† Roberts, Hugh Jones, Sea View, Penygroes, R.S.O., N. Wales.

1883 Roberts, John Coryton, L.R.C.P. Ed., 71, Peckham rye, S.E.

1893 Roberts, Thomas, 95, Tredegar road, Bow, E.

1874 Robertson, William Borwick, M.D., St. Anne's, Thurlow park road, West Dulwich, S.E.

1892 Robinson, George H. Drummond, M.D., B.S. Lond., 84, Park street, Grosvenor square, W. *Board Exam. Midwives*, 1898. *Trans.* 1.

1887 Robinson, Hugh Shapter, L.R.C.P. Ed., Talfourd House, Camberwell, S.E.

1895† Robson, Alfred William, M.D. Brux., Kempstow House, 111, Park road, Aston, Birmingham.

1890† Robson, A. W. Mayo, F.R.C.S., 7, Park square, Leeds.

1876† Roe, John Withington, M.D., Ellesmere, Salop.

1874*† Roots, William Henry, Canbury House, Kingston-on-Thames.

1874 Roper, Arthur, M.D. St. And., Colby, Lewisham hill, S.E. *Council*, 1886-8.

1865*† Roper, George, M.D., Consulting Physician to the Royal Maternity Charity; Southwold, Suffolk. *Council*, 1875-7, 1883-5. *Vice-Pres.* 1879-81, 1889, *Board Exam. Midwives*, 1880-1, 1883-5. *Trans.* 10.

1859 Rose, Henry Cooper, M.D., 16, Warwick road, Maida hill, W. *Council*, 1875-7. *Trans.* 4.

1893† Rosenau, Albert, M.D., Hôtel Victoria, Kissingen, Bavaria. (*Winter*, Avenue la Costa, Monte Carlo.)

1884† Rossiter, George Frederick, M.B., Surgeon to the Weston-super-Mare Hospital; Cairo Lodge, Weston-super-Mare.

Elected

1884† ROUGHTON, WALTER, F.R.C.S., Cranborne House, New Barnet.

1882* ROUTH, AMAND, M.D., B.S., Obstetric Physician to, and Lecturer on Practical Obstetrics and Gynæcology with care of Out-patients at, Charing Cross Hospital; 14A, Manchester square, W. *Council*, 1886-8, 1896-7. *Board Exam. Midwives*, 1893-5. *Hon. Lib.* 1898. *Trans.* 4.

O.F.* ROUTH, CHARLES HENRY FELIX, M.D., Consulting Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square, W. *Council*, 1859-61. *Vice-Pres.* 1874-6. *Trans.* 13.

1887*†ROWE, ARTHUR WALTON, M.D. Dur., 1, Cecil street, Margate.

1881† ROWORTH, ALFRED THOMAS, Grays, Essex.

1886 RUSHWORTH, FRANK, M.D. Lond., 1A, Goldhurst terrace, South Hampstead, N.W.

1888† RUSHWORTH, NORMAN, L.R.C.P. Lond., Beechfield, Walton-on-Thames.

1886† RUTHERFOORD, HENRY TROTTER, M.A., M.D. Cantab., Salisbury House, Taunton. *Council*, 1892-3. *Trans.* 1.

1895† RUTHERFORD, GEORGE JAMES, L.R.C.P.Lond.; Hastings, St. Leonard's, and East Sussex Hospital, Hastings.

1866*†SABOIA, Baron V. de, M.D., Director of the School of Medicine, Rio de Janeiro; 7, Rua dom Affonso, Petropolis, Rio Janeiro. *Trans.* 2.

1864*†SALTER, JOHN H., D'Arcy House, Tolleshunt d'Arcy, Kelvedon, Essex. *Council*, 1894-6.

1868* SAMS, JOHN SUTTON, St. Peter's Lodge, Eltham road, Lee, S.E. *Council*, 1892.

1886† SANDERSON, ROBERT, M.B. Oxon., 98, Montpellier road, Brighton.

1872 SANGSTER, CHARLES, 148, Lambeth road, S.E.

1891† SAUNDERS, FREDERICK WILLIAM, M.B., B.C.Cantab., Chieveley House, near Newbury.

Elected

1872† Savage, Thomas, M.D., Surgeon to the Birmingham and Midland Hospital for Women; 133, Edmund street, Birmingham. *Council*, 1878-80.

1877 Savory, Charles Tozer, M.D., 6, Douglas road, Canonbury, N. *Trans.* 1.

1894† Savory, Horace, M.A., M.B., B.C. Cantab., Haileybury College, Hertford.

1890 Schacht, Frank Frederick, B.A., M.D.Cantab., 168, Earl's Court road, S.W.

1888 Scott, Patrick Cumin, B.A., M.B. Cantab., 38, Shooter's Hill road, Blackheath, S.E.

1866 Sequeira, James Scott, 68, Leman street, Goodman's fields, E., and Crescent House, Cassland crescent, Cassland road, South Hackney, N.E.

1882 Serjeant, David Maurice, M.D., 1, The Terrace, Camberwell, S.E.

1875 Seton, David Elphinstone, M.D., 1, Emperor's gate, S.W. *Council*, 1884.

1896† Sharman, Mark, M.B., C.M.Glas., Rickmansworth.

1894† Sharpin, Archdale Lloyd, L.R.C.P. Lond., 23, Kimbolton road, Bedford.

O.F.† Sharpin, Henry Wilson, F.R.C.S., Consulting Surgeon to the Bedford General Infirmary; 1, St. Paul's square, Bedford. *Council*, 1871-3. *Trans.* 1. *Hon. Loc. Sec.*

1887 Shaw, John, M.D. Lond., Obstetric Physician to the North West London Hospital; Burlington House, Willoughby road, Hampstead. *Trans.* 3.

1891 Shaw-Mackenzie, John Alexander, M.D. Lond., 31, Grosvenor street, W.

1896† Sheppard, Walter Sidney, B.A., M.B., B.Ch.Cantab., Charing Cross Hospital, W.

1874† Sinclair, Alexander Doull, M.D., Consulting Physician to the Boston Lying-in Hospital; 35, Newbury street, Boston, Massachusetts, U.S.

Elected

1888† SINCLAIR, WILLIAM JAPP, M.D. Aber., Honorary Physician to the Southern Hospital for Women and Children and Maternity Hospital, Manchester; and Professor of Obstetrics and Gynæcology, Owens College, Manchester; 250, Oxford road, Manchester.

1881† SLOAN, ARCHIBALD, M.B., 21, Elmbank street, Glasgow.

1876† SLOAN, SAMUEL, M.D., C.M., 5, Somerset place, Sauchiehall street west, Glasgow.

1890† SLOMAN, FREDERICK, 18, Montpellier road, Brighton.

1861 SLYMAN, WILLIAM DANIEL, 26, Caversham road, Kentish Town, N.W. *Council*, 1881.

1867* SMITH, HEYWOOD, M.D., 18, Harley street, Cavendish square, W. *Council*, 1872-5. *Board Exam. Midwives*, 1874-6. *Trans.* 6.

1875 SMITH, RICHARD THOMAS, M.D., Physician to the Hospital for Women, Soho square; 117, Haverstock hill, N.W.

1886† SMITH, SAMUEL PARSONS, L.K.Q.C.P.I., Park Hyrst, Addiscombe road, Croydon.

1882† SMITH, STEPHEN MABERLY, L.R.C.P. Ed., Keerie Kara, Ryrie Street, Geelong, Melbourne.

1895 SODEN, WILFRED NEWELL, M.B.Lond., 186, Amhurst road, Hackney, N.E.

1895 SPARKS, CHARLES EDWARD, M.B., B.C., B.A.Cantab., Cassland House, South Hackney, N.E.

1868* SPAULL, BARNARD E., 1, Stanwick road, West Kensington, W.

1888* SPENCER, HERBERT R., M.D., B.S.Lond., Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital; 104, Harley street, W. *Council*, 1890-92. *Board Exam. Midwives*, 1896-7. *Hon. Sec.* 1898. *Trans.* 4.

1876† SPENCER, LIONEL DIXON, M.D., Brigade-Surgeon, I.M.S., Bengal Establishment [care of Messrs. Grindlay and Co., 55, Parliament street, S.W.].

Elected

1882 Spooner, Frederick Henry, M.D., Maitland Lodge, Maitland place, Clapton, N.E.

1876† Spurgin, Herbert Branwhite, 82, Abington street, Northampton.

1897 Stabb, Arthur Francis, M.B., B.C. Cantab., St. Thomas's Hospital, S.E.

1893 Stack, E. H. Edwards, M.B., B.C. Cantab., St. Bartholomew's Hospital, E.C.

1894 Stevens, Thomas George, M.D., B.S. Lond., 8, St. Thomas's street, S.E. *Trans.* 2.

1884† Stevenson, Edmond Sinclair, F.R.C.S. Ed., Strathallan House, Rondebosch, Cape of Good Hope. *Trans.* 2.

1877† Stephenson, William, M.D., Professor of Midwifery, University of Aberdeen; 3, Rubislaw terrace, Aberdeen. *Council*, 1881-3. *Vice-Pres.*, 1887-9. *Trans.* 2.

1875*†Stewart, William, F.R.C.P. Ed., 26, Lethbridge road, Southport.

1884† Stiven, Edward W. F., M.D., The Manor Lodge, Harrow-on-the-Hill.

1884 Stivens, Bertram H. Lyne, M.D.Brux., 107, Park street, Grosvenor square, W.

1883 Stocks, Frederick, 421, Wandsworth road, S.W.

1894† Stott, William Atkinson, M.R.C.S., L.R.C.P. Lond., 1, Grove terrace, Leeds.

1866* Strange, William Heath, M.D., 2, Belsize avenue, Belsize park, N.W. *Council*, 1882-4.

1895 Stuck, Sidney Joseph, M.D., Whitechapel Infirmary, E.

1884 Sunderland, Septimus, M.D., 11, Cavendish place, Cavendish square, W.

1883* Sutherland, Henry, M.A., M.D. Oxon., M.R.C.P., 6, Richmond terrace, Whitehall, S.W.

1888 Sutton, John Bland, F.R.C.S., 48, Queen Anne street, Cavendish square, W. *Council*, 1894-5. *Trans.* 3.

1894 Swallow, Allan James, M.B., B.S. Durh., 5, Mount Edgecumbe gardens, Clapham rise, S.W.

Elected

1896 SWAN, CHARLES ATKIN, M.B., B.Ch.Oxon., 4, Devonport street, Gloucester square, W.

1893 SWAYNE, FRANCIS GRIFFITHS, M.A., M.B., B.C.Cantab., 15, Church road, Norwood, S.E.

1859*†SWAYNE, JOSEPH GRIFFITHS, M.D., Physician-Accoucheur to the Bristol General Hospital; Harewood House, 74, Pembroke road, Clifton, Bristol. *Council*, 1860-1, *Vice-Pres.* 1862-4. *Trans.* 9.

1892† SWAYNE, WALTER CARLESS, M.B. Lond., 8, Leicester place, St. Paul's road, Clifton.

1888* SWORN, HENRY GEORGE, L.K.Q.C.P. & L.M., 5, Highbury crescent, N.

1883 TAIT, EDWARD SABINE, M.D., 48, Highbury park, N. *Council*, 1892-4. *Trans.* 1.

1879 TAIT, EDWARD W., 48, Highbury park, N. *Council*, 1886-7.

1871*†TAIT, LAWSON, F.R.C.S., Surgeon to the Birmingham and Midland Hospital for Women; 7, The Crescent, Birmingham. *Trans.* 15.

1880*†TAKAKI, KANAHEIRO, F.R.C.S., 10, Nishi-Konyachō, Kiōbashika, Tokio, Japan. *Hon. Loc. Sec.*

1859 TAPSON, ALFRED JOSEPH, M.B. Lond., 36, Gloucester gardens, Westbourne terrace, W. *Council*, 1862-4. *Vice-Pres.* 1891.

1891 TARGETT, JAMES HENRY, M.B., M.S. Lond., F.R.C.S., 6, St. Thomas's street, S.E. *Council*, 1895.

1892 TATE, WALTER WILLIAM HUNT, M.D.Lond., Assistant Obstetric Physician to St. Thomas's Hospital; 57, Queen Anne street, Cavendish square, W. *Council*, 1895-7. *Trans.* 1.

1871 TAYLER, FRANCIS T., B.A. Lond., M.B., Claremont villa, 224, Lewisham High road, S.E.

1869† TAYLOR, JOHN, Earl's Colne, Halstead, Essex.

Elected

1890*†Taylor, John William, F.R.C.S., Surgeon to the Birmingham and Midland Hospital for Women; Consulting Surgeon to the Wolverhampton Hospital for Women; 22, Newhall street, Birmingham. *Trans.* 2.

1892 Taylor, William Bramley, 145, Denmark hill, S.E.

1885† Taylor, William Charles Everley, M.R.C.P. Edin., 34, Queen street, Scarborough.

1894† Tench, Montague, M.D. Brux., L.R.C.P. Lond., Great Dunmow, Essex.

1890† Thomas, Benjamin Wilfred, L.R.C.P. Lond., Welwyn.

1887† Thomas, William Edmund, L.R.C.P.Ed., Pentwyn, Bridgend, Glamorganshire.

1867*†Thompson, Joseph, L.R.C.P. Lond., Surgeon to the General Hospital and Hospital for Women, Nottingham; 1, Oxford street, Nottingham. *Trans.* 1. *Hon. Loc. Sec. Council*, 1896-8.

1878 Thomson, David, M.D., 33, Lowndes street, Belgrave square, S.W.

1879 Thornton, J. Knowsley, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children, 49, Montagu square, W. *Council*, 1882-3. *Hon. Lib.* 1884-5. *Hon. Sec.* 1886. *Vice-Pres.* 1888, 1893. *Trans.* 6.

1873* Ticehurst, Charles Sage, Petersfield, Hants.

1866 Tilley, Samuel, 32, West Kensington gardens, W.

1887† Tinley, Thomas, M.D. Durh., Hildegard House, Whitby.

1895† Tinley, William Edwin Falkingridge, M.B., B.S.Durh., Hildegard House, Whitby.

1879† Tivy, William James, F.R.C.S. Ed., 8, Lansdown place, Clifton, Bristol.

1897 Todd-White, Arthur Thomas, L.R.C.P. Lond., Lancaster House, Leytonstone.

1872† Tototschinoff, N., M.D., Charkoff, Russia.

Elected

1884 TRAVERS, WILLIAM, M.D., 2, Phillimore gardens, W.

1893† TRETHOWAN, WILLIAM, M.B., C.M. Aber., care of Dr. Mac-Williams, Perth, Western Australia.

1886† TUCKETT, WALTER REGINALD, Woodhouse Eaves, near Loughborough.

1865* TURNER, JOHN SIDNEY, Stanton House, 81, Anerley road, Upper Norwood, S.E. *Council*, 1893-4.

1891 TURNER, PHILIP DYMOCK, M.D.Lond., 44, Welbeck street, W.

1881† TUTHILL, PHINEAS BARRETT, M.D., Station Hospital, Gibraltar.

1861 TWEED, JOHN JAMES, F.R.C.S., 14, Upper Brook street, W. *Council*, 1896.

1897 TWYNAM, GEORGE EDWARD, L.R.C.P.Lond., 31, Gledhow gardens, S.W.

1890 TYRRELL, WALTER, L.R.C.P.Lond., 104, Cromwell road, S.W.

1893 UMNEY, WILLIAM FRANCIS, M.D.Lond., Heatherbell, 15, Crystal Palace park road, Sydenham, S.E.

1874* VENN, ALBERT JOHN, M.D., 70A, Grosvenor street, W.

1873* VERLEY, REGINALD LOUIS, F.R.C.P. Ed., St. George's Club, Hanover square, W.

1892† VERRALL, THOMAS JENNER, L.R.C.P.Lond., 97, Montpellier road, Brighton.

1879† WADE, GEORGE HERBERT, Ivy Lodge, Chislehurst, Kent. *Council*, 1892-3.

1894† WAGSTAFF, FRANK ALEX., L.R.C.P. Lond., Saffron Walden, Essex.

1860† WALES, THOMAS GARNEYS, Downham Market, Norfolk.

1894 WALKER, THOMAS ALFRED, L.R.C.P. Edin., Greville Lodge, Willesden park, N.W.

1866† WALKER, THOMAS JAMES, M.D., Surgeon to the General Infirmary, Peterborough; 33, Westgate, Peterborough. *Council*, 1878-80. *Hon. Loc. Sec.*

Elected

1889 WALLACE, ABRAHAM, M.D. Edin., 39, Harley street, W.

1870 WALLACE, FREDERICK, Foulden Lodge, Upper Clapton, N.E. *Council*, 1880-2.

1897† WALLACE, JAMES ROBERT, M.D.Edin., 50, Park street, Calcutta.

1872*†WALLACE, JOHN, M.D., Assistant-Physician to the Liverpool Lying-in Hospital; 1, Gambier terrace, Liverpool. *Council*, 1883-5.

1883 WALLACE, RICHARD UNTHANK, M.B., Cravenhurst, Craven park, Stamford hill, N.

1893† WALLS, WILLLAM KAY, M.B. Lond., St. Mary's Hospital, Manchester.

1879*†WALTER, WILLIAM, M.A., M.D., Surgeon to St. Mary's Hospital, Manchester; 20, St. John street, Manchester.

1867*†WALTERS, JAMES HOPKINS, Surgeon to the Royal Berkshire Hospital; 15, Friar street, Reading, Berks. *Council*, 1884-6. *Trans.* 1. *Hon. Loc. Sec.*

1873† WALTERS, JOHN, M.B., Church street, Reigate, Surrey. *Council*, 1896-8.

1895 WARNER, FREDERICK ASHTON, L.R.C.P., 10, Brechin place, South Kensington, S.W.

1884† WAUGH, ALEXANDER, L.R.C.P. Lond., Midsomer-Norton, Bath.

O.F.† WEBB, HARRY SPEAKMAN, New place, Welwyn, Herts. *Council*, 1889-91. *Vice.-Pres.* 1892-4.

1893† WEBB, JAMES RAMSAY, M.B., B.S.Melbourne, 82, St. Vincent place south, Albert park, Melbourne.

1894† WEBB, JOHN CURTIS, M.A., M.B., B.C. Cantab., 16, Canning street, Liverpool.

1886† WEBBER, WILLIAM W., L.R.C.P. Ed., Crewkerne.

1893† WEBSTER, THOMAS JAMES, Brynglâs, Merthyr Tydvil.

1897† WEEKS, COURTENAY CHARLES, L.R.C.P.Lond., Pinchbeck, Spalding.

1887† WELLS, ALBERT PRIMROSE, M.A., L.R.C.P. & S., L.M., 16, Albemarle road, Beckenham.

Elected

1876† WELLS, FRANK, M.D., 178, Devonshire street, Boston, Massachusetts.

1886† WEST, CHARLES J., L.R.C.P. Lond., The Grove, Fulbeck, Grantham.

1888† WESTON, JOSEPH THEOPHILUS, M.D.Brux., Civil Surgeon, Hissar, Punjab (care of Messrs. Thacker, Spink, and Co., booksellers and publishers, Government place, Calcutta).

1886 WHARRY, ROBERT, M.D. Aber., 6, Gordon square, W.C.

1890 WHEATON, SAMUEL W., M.D.Lond., Physician to the Royal Hospital for Children and Women; 76, The Chase, Clapham common, S.W.

1889† WHITCOMBE, CHARLES HENRY, F.R.C.S. Edin., 281, Queen's road, Halifax.

1890 WHITE, CHARLES PERCIVAL, M.A., M.B., B.C.Cantab., 144, Sloane street, S.W.

1890 WHITE, EDWIN FRANCIS, F.R.C.S., Westlands, 280, Upper Richmond road, Putney, S.W.

1882 WHOLEY, THOMAS, M.B. Durh., Winchester House, 50, Old Broad street, E.C.

1879† WILLANS, WILLIAM BLUNDELL, F.R.C.P. Ed., Much Hadham, Herts.

1894† WILLIAMS, JOHN D., M.D. Ed., B.Sc., 20, Windsor place, Cardiff.

1872 WILLIAMS, Sir JOHN, Bart., M.D., F.R.C.P., Physician-Accoucheur to H.R.H. Princess Beatrice, Princess Henry of Battenberg; Consulting Obstetric Physician to University College Hospital; 63, Brook street, Grosvenor square, W. *Council*, 1875-6, 1892, 1894. *Hon. Sec.* 1877-9. *Vice-Pres.* 1880-2. *Board Exam. Midwives*, 1881-2; *Chairman*, 1884-6. *Pres.* 1887-8. *Trans.* 12. *Trustee.*

1897 WILLIAMS, JOSEPH WILLIAM, L.R.C.P., 128, Mansfield road, Gospel Oak, N.W.

1890 WILLIAMS, REGINALD MUZIO, M.D.Lond., 95, St. Mark's road, N. Kensington, W.

Elected

1881 WILLIS, JULIAN, M.R.C.P. Ed., 64, Sutherland avenue, Maida vale, W.

1892† WILSON, THOMAS, M.D., B.S.Lond., F.R.C.S., Assistant Obstetric Physician at the General Hospital, Birmingham; 22, Temple row, Birmingham. *Trans.* 1.

1886† WINTERBOTTOM, ARTHUR THOMAS, L.R.C.P. Ed., Lark hill, Swinton, Manchester.

1896† WINTER, JOHN BRADBURY, L.R.C.P, 28, Montpelier road, Brighton.

1877 WINTLE, HENRY, M.B., Kingsdown, Church road, Forest hill, S.E.

1893 WISE, ROBERT, M.D.Edin., 5, Weston park, Crouch End, N.

1887† WITHERS, ROBERT, Stenteford Lodge, Spencer terrace, Lipson road, Plymouth.

1890 WORNUM, GEORGE PORTER, 6, College terrace, Belsize park, N.W.

1876† WORTS, EDWIN, 6, Trinity street, Colchester.

1887† WRIGHT, CHARLES JAMES, Senior Surgeon to the Hospital for Women and Children, Leeds; Professor of Midwifery to the Yorkshire College; Lynton Villa, Virginia road, Leeds.

1888*† WYATT-SMITH, FRANK, M.B., B.C.Cantab., British Hospital, Buenos Ayres.

1871 YARROW, GEORGE EUGENE, M.D., 26, Duncan terrace Islington, N. *Council*, 1881-3.

1882*† YOUNG, CHARLES GROVE, M.D., New Amsterdam, Berbice, British Guiana.

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ADVERTISEMENT.

THE SOCIETY is not as a body responsible for the facts and opinions which are advanced in the following papers and communications read, nor for those contained in the abstracts of the discussions which have occurred at the meetings during the Session.

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AGNES HANNAM,
Secretary and Librarian.

OBSTETRICAL SOCIETY

OF

LONDON.

SESSION 1897.

JANUARY 6TH, 1897.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—30 Fellows and 2 visitors.

Books were presented by Dr. Frommel and the Medical Society.

G. Herbert Hopkins, F.R.C.S. (Brisbane), was declared admitted a Fellow of the Society.

The following gentlemen were elected Fellows of the Society:—Llewellyn C. P. Phillips, M.A., M.B., B.C. Cantab.; William Gladstone Clark, M.A.Cantab., M.R.C.S.; J. D. Rawlings, M.B.Lond.; Evan Laming Evans, M.B., B.C.Cantab.

Report of Committee on Dr. Remfry's specimen, shown as Chorionic Villi and Doubtful Sarcoma on July 1st, 1896.*

We, the undersigned, having met this day, have examined the microscopical sections and heard the history of the case recorded as sarcoma of the uterus on July 1st, 1896, and are of opinion that the sections are composed entirely of decidual tissue, chorionic villi, and blood-clot, and present the characters usually met with in placental polypi, and show no evidence of malignant disease.

The long period of normal menstruation following the last confinement, viz. fifteen months, is very strong evidence against the supposition that these are placental remains of that pregnancy.

Alban Doran.
A. A. Kanthack.
J. H. Targett.
Leonard Remfry.
J. Bland Sutton.
Herbert G. Spencer.
T. W. Eden.
Walter S. A. Griffith.

Report of Committee on Dr. Lewers's specimen of Fœtus with Cystic Tumour of Neck,† shown March 4th, 1896.

We, the undersigned, have met this day, and after examining the specimen named above, have drawn up and signed the following report.

The body is that of a well-developed male fœtus, delivered at term by perforation of the head. There is a large tumour on the left side of the neck, occupying the entire

* See vol. xxxviii, p. 223.
† Ibid., p. 106.

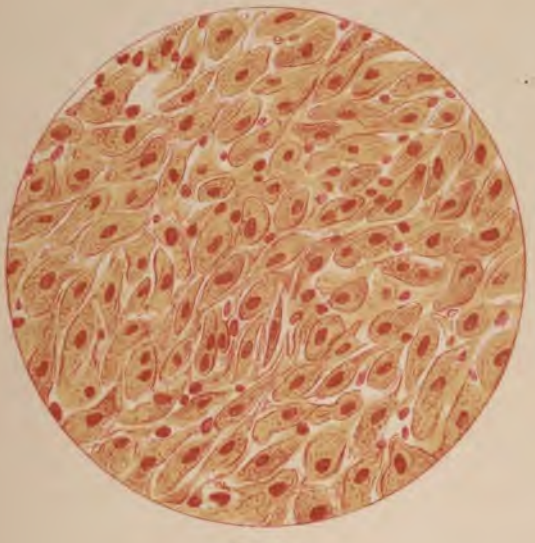


FIG. 1.

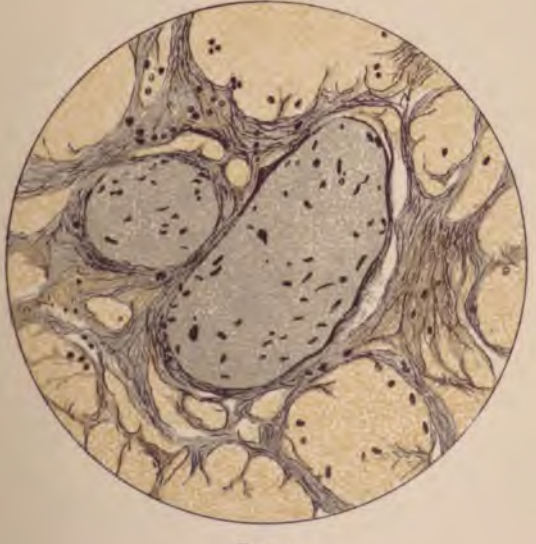


FIG. 2.

DR. REMFRY'S SPECIMEN.

(For reference see Vol. XXXVIII., p. 223.)

Drawn from Nature and Litho. by Bale & Danielsson, Ltd

space between the head and the left shoulder. The situation and outline of this tumour are shown in the accompanying photograph. By dissection it is found that the tumour is placed beneath the deep cervical fascia and the left sterno-mastoid muscle. In front it overlaps and displaces the trachea and œsophagus to the right, but is separated from them by the depressor muscles of the larynx and the upper end of a large thymus. The left carotid vessels lie beneath the mass. Posteriorly it extends backwards to the outer edge of the trapezius muscle, and above it is bounded by the lower border of the inferior maxilla, the ear, and the mastoid region of the skull.

The tumour consists of one large cyst about 5 inches in diameter, and of two or three small loculi which appear to be in the outer wall of the main cyst. Projecting into the cavity of the large cyst is a spongy, lobulated, sessile tumour, which has a constricted attachment to the wall of the cyst upon its inner and inferior aspect. In the recent state the remainder of the cyst was filled with grumous fluid and softened portions of the growth.

Microscopical sections of the tumour exhibit a variety of tissues. The greater part of the section consists of interlacing bundles of striped muscle cells; but in addition there are nodules of fœtal hyaline cartilage, acini and tubules of gland tissue, fibrous tissue, and a considerable amount of mucoid connective tissue. Thus in structure this tumour closely corresponds with the more common congenital sacral or coccygeal tumour developed in connection with the post-anal gut.

ALBAN DORAN.
ARTHUR H. N. LEWERS.
J. H. TARGETT, *Convener.*

SPECIMEN OF MALIGNANT PAPILLOMA OF UTERUS.

Shown by Dr. Amand Routh.

Dr. Amand Routh showed a uterus removed by vaginal hysterectomy, and some microscopical slides of sections of a growth it contained.

The woman, aged 57, was first seen by Dr. Routh in June, 1894, for continuous blood-stained watery discharge from the uterus; her uterus was enlarged. It was rapidly dilated; soft fungous material was felt in the left cornu, and was curetted away and found microscopically to be innocent.

March, 1895.—Hæmorrhage again for six months; again curetted. Dr. Tate stated that the material removed was non-malignant.

April, 1896.—Was curetted again for further loss. Mr. Targett reported as follows:—

"*Microscopic Examination of Uterine Curettings, April,* 1896.

"*Case of Mrs. J—, third recurrence.*—The scrapings were imbedded in a block, and sections prepared of it. They were found to consist of a very delicate papillomatous growth which essentially resembled the common fimbriated papilloma of the urinary bladder. Each process or villus was made of a minute capillary loop, surrounded by a mere trace of cellular tissue, and covered with a single layer of columnar epithelial cells resting on a definite basement membrane. As these processes or villi divided and subdivided they were cut in various planes, and the sections of the intervillous spaces appeared as tubules with a lining of columnar epithelium. Thus the field of the microscope presents a mingling of branched villi and tubules in every variety of shape and size. There is

nothing, however, in any of the sections which differs from the ordinary structure of the fimbriated papilloma springing from the mucous surface of such an organ as the urinary bladder. This specimen cannot therefore be described as malignant."

In September, 1896, six months after the last curetting, hæmorrhage recurred, and as Mr. Targett agreed that as a result of his microscopical examination the uterus should be removed if there should be recurrence of hæmorrhage, Dr. Routh performed vaginal hysterectomy in November last.

The patient had an attack of pleurisy with effusion on the tenth day, and sudden right hemiplegia and aphasia on the sixteenth, but is now quite well.

The following is Mr. Targett's report of the microscopical appearance of the specimen.

"*Microscopic Examination of Uterine Growth, November 4th*, 1896.

"*Case of Mrs. J*—.—A piece of the margin of the growth with the subjacent uterine wall was removed from the specimen and embedded. Under the microscope all that part of the growth which projects into the cavity of the uterus is composed of delicate branching papillomata, cut in various planes. The structure of these papillomata is precisely like those in the curettings already described, but they are more closely packed, which renders the growth more solid in appearance. The base of the section is made of normal uterine muscle. Where the growth and muscle are in contact there is distinct evidence that the latter is invaded by the growth. This is shown by the presence of thin strands of unabsorbed muscle traversing the tumour, and by extension of the papillomata into the subjacent muscle (between its bundles of fibres) at the extreme limit of the tumour. In thus infiltrating the wall of the uterus the neoplasm retains its papillomatous type, and can

therefore be distinguished from the columnar-celled (tubular) carcinoma, which usually affects the body of the uterus."

The case illustrates the tendency which simple adenomata and papillomata have to become malignant when affecting the uterus.

UTERUS FROM A CASE OF PORRO'S OPERATION WITH INTRA-PERITONEAL TREATMENT OF THE STUMP.

Shown by Dr. W. J. Gow.

Dr. Gow showed a case illustrative of Porro's operation with intra-peritoneal treatment of the stump. The uterus was removed from a woman 37 years of age, who was eight months advanced in pregnancy, and was the subject of numerous fibroid tumours. One of the tumours lay in Douglas's pouch, and reduced the available conjugate to 2 inches. The tumour could not be pushed up, neither did it rise up spontaneously as pregnancy advanced, and at the time of the operation it was found to be fixed in Douglas's pouch by firm adhesions. During the last three months of pregnancy the patient had suffered from severe attacks of paroxysmal pain, apparently of a colicky nature, and not associated with uterine contractions.

The child, which weighed 5¾ lbs., was removed by the ordinary incision, and the uterus, which retracted well, was then drawn out through an abdominal incision which reached just above the umbilicus, and the broad ligaments with the uterine arteries were tied on both sides. The ovary on the left side was not removed. The mass was then cut away at the level of the os internum, and the

pedicle having been treated in the ordinary way, and the peritoneum stitched over, it was dropped back into the abdomen.

The operation was performed on December 8th, 1896, and the mother made an uninterrupted recovery. The child has also done well.

Dr. Gow mentioned that during the last eighteen months he has exclusively employed the intra-peritoneal method of treating the stump in all cases of abdominal hysterectomy for fibroids, and out of seventeen cases has had sixteen recoveries and one death.

PAROVARIAN CYST WITH ACUTE AXIAL ROTATION.

Shown by Dr. A. W. W. Lea.

Dr. A. W. W. Lea showed a parovarian cyst which had undergone acute axial rotation, and caused symptoms of intestinal obstruction.

A CASE OF FIBROMA OF THE OVARY UNDERGOING CALCAREOUS DEGENERATION.

Shown by Dr. C. Hubert Roberts.

The history of the case from which the specimen was obtained was as follows:

Patient aged 29. Married nine years, no pregnancies. Well-marked history of menorrhagia for three years; the periods for the last year or eighteen months had been

excessive, sometimes the loss had lasted from two to six weeks without any cessation. She had complained of some slight pain running down the right thigh, but there had not been any severe abdominal discomfort beyond occasional dysuria. Curetting had been advised for the hæmorrhage, but was not done.

On examination by the vagina a moveable, very hard, heavy tumour, the size of a turkey's egg, was found behind and to the right of the uterus; it could be easily grasped bimanually, but did not rise above the brim of the pelvis; it was quite painless. The uterus was normal in length, 2½ inches; and the tumour appeared to move freely apart from the uterus, but to have a pelvic attachment.

Operation was decided on, and was performed on December 14th, 1896.

On opening the abdomen there was no marked bleeding of the abdominal wall; the incision was enlarged on finding the tumour to be solid. There was no free peritoneal fluid. The tumour was rather difficult to get up out of Douglas's pouch owing to its size, but there were no adhesions. The pedicle was short and very thick, and its vessels were large; there was no twisting of the pedicle. The tumour grew from the right side, and was a solid ovarian growth. The pedicle was ligatured in the ordinary way. There was a small cyst the size of a marble near the infundibulo-pelvic ligament. There was no peritoneal infiltration suggestive of malignancy. The uterus was natural. The left ovary, which was small and firm, was left *in situ*. The wound was closed in the ordinary way. No drainage was used.

Description of tumour.—The specimen was a solid growth of the ovary of the right side, with the tube and part of the broad ligament and ovarian ligament. The tumour weighed when fresh 6¼ ounces, its length was 3½ inches, depth 2¾ inches, and its thickness 2 inches. It was irregularly ovoid in shape, pink in colour when fresh, and stony hard to the touch, and crackled curiously on firm pressure; the surface was fairly smooth but

irregularly bossed. The tube was quite natural, as was also the broad ligament except for the small cyst mentioned above, over which the ovarian fimbria ran. All the vessels in the broad ligament were much enlarged, as was also the ovarian ligament.

On section.—(This was difficult owing to the very large amount of calcareous material in the tumour.) There did not seem to be any definite capsule, but a thicker portion existed near the hilum, beneath which were seen some very large vessels. The tumour was nearly everywhere firm and solid, and when fresh exhibited a pinkish white appearance; the portions of the tumour at the periphery were firm and fibrous-looking, while the more central parts were somewhat softer and œdematous. Here and there throughout the tumour large islets of the firmer material existed, intersected by ramifications of softer tissue, as is seen sometimes in multinucleated fibroids. No traces of any dermoid structures could be made out.

Everywhere except at the extreme periphery the tumour contained large masses of hard calcareous material. Near the centre of the tumour these masses were larger than those placed more externally, which were here chiefly in the form of irregular spicules. None of these calcareous masses conformed to any definite shape. There was nothing like cystic degeneration seen. No structure like ordinary ovarian tissue could be seen.

Remarks.—Dr. Roberts did not think that there was anything particularly remarkable about the tumour, but that it might be added to the list of fibromata of the ovary already brought before the Society by his colleague Mr. Alban Doran ('Obstetrical Transactions,' vol. xxxvii).

The case resembled in many particulars those quoted by Mr. Doran. The tumour shown bore the naked-eye characters of a fibroma, and its extreme hardness was evident. The patient was also a young woman and sterile. In the present case the catamenia were profuse (as in Doran's Case 10), dysuria was a symptom, but there

was only slight abdominal discomfort. The tumour had not risen into the abdomen as many dermoids do. Mr. Doran had remarked on the absence of pain in nearly all his cases. In this case the tumour itself was quite painless on manipulation; the uterine cavity was not enlarged. The abdominal wound, though enlarged considerably in order to get the tumour out, did not bleed to any great extent.

There was no free peritoneal fluid, which Mr. Doran spoke of as a common condition in ovarian fibromata.

The tumour had undergone calcification: Doran in his series had noted one case. In the tumour just described the change was most marked, especially in the central portions of the mass; there was also some œdematous change going on.

The pedicle was noted as very short and thick, and its vessels very much enlarged. There were no adhesions.

One great feature was the extreme weight and hardness of the tumour, which, though small, weighed 6¼ ounces. Larger tumours of this nature did occur; one in St. Bartholomew's Hospital (2925 B) weighs 3 lbs. (Mr. Doran removed this). This also showed degenerative changes in its interior, but no calcification. The present case was of interest as showing that fibromata of the ovary undergo calcareous degeneration like the uterine fibro-myomata, though only a few cases were on record. It was to be remembered, too, that fibroma of the ovary itself was of rare occurrence.

Sections of the tumour showed chiefly dense interlacing masses of fibrous tissue, the chief feature being the abundance of nuclei. The fibres themselves appeared to be short and densely crowded together, almost giving in places the appearances of sarcoma. No recognisable ovarian structures could be made out. There did not appear to be anything like cystic degeneration.

Dr. Kanthack had kindly looked at the sections, and agreed in thinking the tumour to be a "fibroma of the ovary, in which the nuclei of the fibres were very

numerous. The central portions of the growth were undergoing calcareous changes, probably degenerative."

Dr. Roberts thanked Mr. Meredith, under whose care the patient had been, for allowing him to show the tumour, and for the notes of the case. The patient had done very well.

Mr. ALBAN DORAN had already noted in the paper to which Dr. Hubert Roberts referred that fibroma of the ovary caused less pain than dermoid or any other solid or semi-solid ovarian tumour, yet it was always hard and heavy. Ascites was, on the other hand, quite frequent in fibroma of the ovary; whilst in uterine myoma, also hard and heavy, it was decidedly rare. Since his paper had been published, Mr. Doran had not heard of any attempt to explain the above facts, which remained a mystery to him. Lastly, he denied that menorrhagia was pathognomonic of fibroma of the ovary. In his published series the catamenia seemed but little affected, and free show, as in Dr. Roberts's interesting case, might well be due to pure coincidence.

NOTE ON THE ÆTIOLOGY OF ECLAMPSIA.

By Dr. MACNAUGHTON JONES.

THE various theories of eclampsia were discussed, and a case of albuminuria was described where labour was induced about the fifth month. Convulsions occurred before labour was completed, and during the twelve hours succeeding delivery. One tenth of a grain of pilocarpin was injected hypodermically. The patient recovered.

Remarks were made by Dr. John Phillips and Dr. Herman.

ON BREECH PRESENTATION WITH EXTENDED LEGS.

By W. S. A. Griffith, M.D., F.R.C.S., F.R.C.P.;

AND

Arnold W. W. Lea, M.D., B.S., F.R.C.S.

(Received November 7th, 1896.)

(*Abstract.*)

Notes of Cases.

Case 1.—Primipara, aged 27. Duration of labour: 1st stage, 19 hours; 2nd stage, 3 hours 10 minutes. The patient was seen first in the early part of the second stage. Child lay in left sacro-anterior position. The breech ceased to advance in the lower part of the vagina, the pains being feeble. A fillet was applied over both groins and slipped up above the sacrum. Delivery was easily effected, slight force only being required. The legs were extended and lay just below the shoulders. After delivery the child drew them up flexed.

Weight of child, 7 lbs. 2 oz.; alive.

Case 2.—Secundipara, aged 29. Labour was induced at eight months by passing a bougie. The pelvis was flattened, the diagonal conjugate measured 3¾ inches. The fœtus before labour lay above the pelvic brim. Duration of labour: 1st stage, 14 hours 10 minutes; 2nd stage, 2 hours 40 minutes. It was deemed advisable to bring down a foot early in labour.

The legs were extended. Chloroform was given. The hand was passed up to the bend of the knee. The lower part of the thigh was pushed outwards, and the leg readily became flexed, a foot being seized and brought down into the vagina. Labour now went on rapidly, and the child was delivered without any interference as far as the shoulders. The head, however, was fixed above the brim, and there was some delay in extraction.

Infant, 5 lbs. 4 oz.; stillborn.

Case 3.—Primipara, aged 33. Duration of labour: 1st stage, 6 hours 30 minutes; 2nd stage, 4 hours. The child lay low in the pelvis in the early stage of labour. The fœtal heart-sounds were heard below and to the left of the umbilicus. Position: left sacro-anterior. The breech descended slowly through the vagina, and was born without any interference. The legs were extended. The arms, however, became extended by the side of the head. They were brought down and the head was delivered without great difficulty. The child, however, was very blue. Respiration could not be restored, and death ensued shortly after delivery.

Infant, weight 7 lbs. 8 oz.

Case 4.—Primipara, aged 23. Duration of labour: 1st stage, 26 hours; 2nd stage, 30 minutes. Position: left sacro-anterior. The breech did not enter the brim well, and appeared to be very large. Chloroform was given, and a foot brought down by passing the hand up to the fold of the knee and pushing the thigh outwards; the knee readily became flexed, and the foot was seized and brought into the vagina. The breech then rapidly descended, and labour terminated without any further interference. The legs remained flexed after birth; hence, probably, they were extended only shortly before labour.

Infant, weight 8 lbs. 3 oz.; 24 inches long; alive.

Case 5.—Primipara, aged 23. Duration of labour: 1st stage, 11 hours; 2nd stage, 1 hour 30 minutes. The child lay in the left sacro-anterior position, and the breech was engaged in the brim. The fœtal heart-sounds were heard best below

and to the left of the umbilicus. The breech descended rapidly through the pelvis, and the child was born without any aid being given. The legs were extended, and remained so for twelve hours after birth.

Infant alive, weight 8 lbs. 11 oz.; length 24 inches.

Case 6.—Primipara, aged 24. Duration of labour: 1st stage, 4 hours; 2nd stage, 3 hours 10 minutes. The patient was first seen when the breech was in the pelvis. Position of child was left sacro-posterior. The breech slowly came down, complete internal rotation occurred. The child was born easily, no aid being required. The legs lay extended by the side of the shoulders.

Infant alive, weight 6 lbs. 12 oz.; length 22½ inches.

Case 7.—3-para. Duration of labour: 1st stage, 15 hours; 2nd stage, 25 minutes. When seen the breech lay low in the pelvis in left sacro-anterior position. The pains were good and the child was born naturally without any aid being required. The legs were extended. Rotation was incomplete.

Infant alive, weight 7 lbs. 4 oz.; length 22 inches.

Case 8.—3-para. This patient had a flattened pelvis. The internal measurements were—diagonal conjugate 4 inches, true conjugate 3½ inches. In the first labour craniotomy was performed, in the second pregnancy labour was induced at eight and a half months, and a living child was obtained. It was therefore decided to induce labour at eight and a half months. The patient was examined when seven and a half months pregnant, and it was thought that the head was presenting. Labour was brought on by the introduction of a bougie, and a rounded fœtal part was found lying in the pelvic brim. Pains rapidly came on. Duration of labour: 1st stage, 5 hours 45 minutes; 2nd stage, 4 hours 30 minutes. The child lay in the left sacro-anterior position. The pains were strong, and the breech descended rapidly through the pelvis. The legs were extended, but no interference was required until the breech was born; the head was now found to be fixed above

the brim. The arms, being extended, were brought down. The head was delivered by rotating into the transverse diameter of brim. There was, however, a delay of three minutes.

Infant stillborn; weight 7 lbs. 11 oz.; length 21 inches.

In this case the child was above the average weight of a full-term infant. No obstruction, however, occurred during delivery of the breech. Death was no doubt caused by delay in extracting the head.

Case 9.—Primipara, aged 30. Duration of labour: 1st stage, 14 hours; 2nd stage, 2 hours. Child lay in left sacro-anterior position. It descended rapidly through the pelvis. The legs were extended; no aid, however, was required. They were flexed after birth.

Infant alive; weight 6 lbs. 4 oz.; length 22 inches.

Case 10.—Primipara, aged 20. Duration of labour: 1st stage, 6 hours 30 minutes; 2nd stage, 1 hour 25 minutes. The child lay low in the pelvis in right sacro-anterior position. The breech descended well through the upper part of the vagina. The pains, however, became more feeble; the soft parts also were rigid. In the lower part of the vagina a fillet was applied over both groins. Delivery was readily effected by gentle traction during the pains. After birth the legs were extended, and were drawn up in this position during two days.

Infant alive; weight 6 lbs.; length 22 inches.

Case 11.—7-para. The child before labour lay with the breech engaged in the brim. The fœtal heart-sounds were heard best to the left and below the umbilicus. Position: left sacro-anterior. Duration of labour: 1st stage, 4 hours; 2nd stage, 1 hour 40 minutes. The breech descended rapidly, and was born without any interference. The legs were extended, but were flexed after birth.

Infant alive; weight 5 lbs. 12 oz.

Case 12.—Primipara, aged 20. The breech lay early in labour well engaged in the pelvic brim. The fœtal heart-sounds were not observed specially. Duration of labour: 1st stage, 27 hours;

2nd stage, 3 hours 10 minutes. The breech descended slowly through the lower part of the vagina. Delivery was effected naturally. The legs were extended on the trunk, and after birth the child drew them up in the extended position, but ceased to do so after the first day.

Infant alive; weight 7 lbs. 15 oz.; length 24 inches.

Case 13.—Secundipara, aged 32. Duration of labour: 1st stage, 3 hours 30 minutes; second stage, 1 hour 45 minutes. Examination *per vaginam* showed that the spines of the fourth and fifth lumbar vertebræ with the sacrum lay over the os. The fœtal pelvis was thus flexed. Chloroform was given, and the breech readily brought over the os. Labour then progressed rapidly. The breech was born with the legs extended, no aid being required. After birth the infant drew up its legs flexed.

Infant alive; weight 6 lbs. 7 oz.; length 21½ inches.

Extension in this case probably occurred early in labour. The flexion of the fœtal pelvis tended to the formation of an obstructing wedge, but this was avoided by bringing the breech over the os uteri early in labour.

Case 14.—Primipara, aged 22. Duration of labour: 1st stage, 14 hours; 2nd stage, 3 hours. Patient was seen first during labour. The breech lay in the pelvic brim. It descended slowly through the vagina, and was detained on the perinæum for thirty minutes. Slight traction was made by the finger in the anterior groin, and delivery readily effected. Rotation was incomplete. The legs were extended on the abdomen, and remained so for twenty-four hours after birth.

Infant alive; weight 7 lbs.

Case 15.—Primipara, aged 29. Duration of labour: 26 hours. The membranes ruptured prematurely. The cervix dilated slowly. The breech remained in the upper part of the vagina for several hours, no advance being made although the pain appeared to be strong. Chloroform was given and a foot was brought down into the vagina by passing the hand high up into the cavity of the uterus. The child was then delivered by

gentle traction. The true conjugate, measured after labour, was 4 inches.

Infant alive, 8 lbs. 5 oz.

In this case the child was unusually large, and it would probably have been wiser to bring down a foot early in labour.

Case 16.—Primipara, aged 33. Duration of labour: 1st stage, 23 hours; second stage, 3 hours 30 minutes. Child lay in left sacro-posterior position, with the legs extended. The breech descended rapidly through the upper part of the vagina. It then ceased to advance. The pains were frequent, but appeared to be weak. Chloroform was given, and a fillet was placed over the anterior groin. Considerable traction had to be used before the buttocks were delivered; the head was born easily. The perinæum was lacerated up to the sphincter ani.

Infant alive; weight 7 lbs.

Case 17.—17-para, aged 39. Fifteen pregnancies had gone on to full term. All the male children were, however, delivered by difficult forceps operations, or by craniotomy. On examination at eight and a half months the fœtus was found with one extremity sunk in the pelvis, and the limbs were plainly felt in the abdomen. Labour was brought on by the introduction of a bougie. The membrane ruptured twenty-four hours later. Liquor amnii was scanty; the pains were very feeble, and the cervix dilated slowly. Labour, however, progressed naturally, and the child was born without any assistance thirty-six hours after the rupture of the membranes. The legs were extended on the abdomen.

Infant alive; weight 7 lbs. 4 oz.

The legs were drawn up, extended for twenty-four hours after birth, and then became flexed naturally.

Pelvic presentations were classified by Pinard as complete and incomplete, and the latter he again subdivided. Thus in tabular form we have—

(*a*) Complete pelvic presentation: the thighs and legs flexed, and the feet lying close to the buttocks.

(*b*) Incomplete pelvic presentation.
  (1) The thighs flexed and the legs extended on the trunk, the feet lying by the side of the shoulders.
  (2) Knee presentations.
  (3) Footling presentations.

In this paper it is proposed mainly to consider the presentations with extended legs, the *mode de fesses* of French writers. Notes are given of seventeen cases of this presentation.

This presentation with legs extended may be primary, existing during the later months of pregnancy; or it may be secondary, developed out of a complete pelvic presentation early in labour. In the complete breech presentation the presenting part is not engaged in the brim, and it is easy to understand that the feet may become slightly separated from the buttocks, and as the breech descends during labour, friction against the uterine wall may complete the extension; or, more probably, the descent of the feet and legs is arrested by the pelvic brim, and they remain behind. Again, it is not uncommon for a condition of partial extension of the legs to be present before the onset of labour, one or both feet lying in the iliac fossa. In these ways, then, the secondary variety, which is probably the more frequent, is produced.

The primary form is, however, by no means uncommon, and presents certain peculiarities by which it may be recognised.

If the legs are extended during pregnancy, the child presents, after delivery, a peculiar deformity which was first pointed out by Lefour. He observed in several of these cases that the child after birth drew up its legs with the knees extended, the feet lying close to the shoulders. This, however, does not happen if the extension has only been produced during labour. This observation of Lefour has been confirmed by others, and

several of the cases recorded here showed the same peculiarity. It should be mentioned, however, that this is not an invariable rule. Ollivier records a case in which fourteen days before labour the feet were believed to be lying close to the shoulders, and yet after birth the attitude of the child was normal. M. Budin has suggested that this variability may be due to the greater or less quantity of liquor amnii. If this is scanty in amount, the extended legs will be maintained in close apposition to the trunk by the uterine contractions. If, however, the liquor is abundant, a certain liberty of movement would be allowed, and the fœtus might, after birth, draw up its legs in the usual way. It is, at any rate, safe to assume that if after birth the legs are drawn up with the knees extended, the presentation has been a primary one. In most cases the legs become naturally flexed within twenty-four hours after birth, but in rare cases it is possible that ankylosis may have occurred, and that some cases of genua recurvata are produced by the legs lying extended *in utero*. Extension of the legs occurs mainly in breech presentations, but it is occasionally observed in vertex presentations.

Diagnosis.—Pelvic presentations with extended legs may be diagnosed during pregnancy, as was first pointed out by M. Budin. It was formerly stated that in breech presentations the pelvis of the child always lay above the brim before labour, and, in fact, that the only part of the fœtus which was ever found engaged in the brim was the vertex. Budin showed that if the legs are extended the breech descends into the pelvic cavity before labour. It is thus quite easy to mistake it for a vertex presentation, and no doubt such mistakes are not rarely made.

If the pelvic presentation is complete, that is, the feet and buttocks present together, the presenting part, owing to its bulk, does not engage in the pelvis, but lies over the brim; the fœtus is usually very mobile, and cephalic ballottement is readily obtained. In the incomplete form with extended legs the bulk of the presenting part

is less, and the breech descends into the cavity of the pelvis. As a result, a true accommodation of the uterus to the unusual shape of the fœtal ovoid takes place. In the usual lie of the child *in utero* the greatest bulk of the fœtus is at the summit of the uterus, and is formed by the complete breech. In the "breech with extended legs" presentation the vertex becomes the larger extremity of the ovoid.

Observations made frequently on infants immediately after birth show that the diameters of the head are always considerably greater than those of the incomplete breech; whereas in the complete breech the pelvic extremity of the child is more bulky than the head.

In these cases, then, *abdominal palpation* shows that the child is lying with one extremity sunk deeply in the pelvic brim. The head may be felt as a rounded mass at the summit of the uterus; cephalic ballottement is often difficult to obtain, and the fœtus as a whole is not very mobile. Tarnier states that occasionally a foot or a leg may be felt lying just below and at the side of the head. Palpation of the lower part of the abdomen reveals a bulky portion of the fœtus occupying the pelvis. This closely resembles the vertex, but Budin points out certain differences. It is not so rounded, and is somewhat irregular in shape, and the depression corresponding to the neck cannot be made out. The back of the child, if anterior, is usually recognised without any difficulty, and is found to be directly continuous with the mass in the pelvis.

Vaginal examination shows a voluminous fœtal part filling up the pelvis. This is, however, with the exception of the sacral portion, less hard and resisting than the vertex, nor is it so regularly rounded. By pressing the finger into the fornices various irregularities may be felt.

In primiparæ, when the cervix is closed, diagnosis may sometimes be difficult; but in multiparæ, in whom the os is often patulous during the later weeks of

pregnancy, the finger may frequently feel the presentation distinctly through the membranes.

Auscultation of the fœtal heart may also afford some help in diagnosis.

It is usually stated in text-books that in pelvic presentations the fœtal heart-sounds are heard best at the level of the umbilicus or above it. In pelvic presentation with extended legs when the breech is engaged in the brim the heart-sounds are heard best below the umbilicus, midway between it and the anterior superior spine on the side towards which the back of the child is directed.

M. Ribemont showed that the fœtal heart is situated midway between the vertex and the breech, and also that the heart-sounds are conducted equally in both directions. Hence, if either the breech or vertex be engaged in the brim, the heart-sounds are heard best below the umbilicus. If, on the other hand, one extremity of the fœtus is not engaged in the brim, as usually happens in presentations of the complete breech, and also in many cases of maternal pelvic deformity, fœtal heart-sounds are heard loudest at the level of, or even above the umbilicus.

Budin in five cases of this presentation heard the fœtal heart best below the umbilicus—in some cases midway between the umbilicus and the anterior superior spine, in others it was heard loudest near the middle line of the abdomen. Henrionnet relates also eight cases in which the same facts were observed.

In five cases observed by us in which auscultation was practised, the heart-sounds were heard best below the umbilicus ; unfortunately, in some cases the fœtal heart-sounds were not specially noted.

Lefour pointed out that in these presentations the back of the child lies nearer to the middle line than it does in the corresponding vertex presentation ; hence the heart-sounds may often be heard best along a line from the umbilicus to the symphysis.

Course of labour and mechanism of delivery.—It is generally considered that pelvic presentations with extended legs are delivered more slowly and with more difficulty than ordinary breech cases, and that this condition is the chief cause of impacted breech. Many authorities state that interference of some kind will frequently be required before delivery can be effected. The incomplete breech usually descends into the cavity of the pelvis without any difficulty, and, indeed, more rapidly than the complete breech or the vertex. As, however, the pelvic extremity advances towards the pelvic outlet, progress becomes very slow. If internal rotation has occurred so that the bi-trochanteric diameter of the fœtus is approximately lying in the antero-posterior diameter of the outlet, lateral flexion of the trunk is necessary before the breech can be delivered. In these cases this is extremely difficult, since, as M. Tarnier pointed out, the knee-joints do not admit of any lateral flexion, and as a consequence the fœtal legs act as splints. The posterior hip is thus forced with each pain against the posterior vaginal wall and perinæum in the direction of the axis of the pelvic brim, and further advance may be arrested. This cause of delay is usually met with in primiparæ in whom the pelvic floor and the perinæum are very firm and resisting. In multiparæ obstruction of this kind is more rarely seen. Internal rotation is not uncommonly very incomplete in these cases; the breech may be born with the bi-trochanteric diameter across the vulva. Lefour and Tarnier record cases in which an exaggeration of the normal internal rotation occurred, the buttock which was anterior in the early part of labour becoming posterior before delivery.

Another cause of difficult delivery in these cases is the fact that the upper extremity of the fœtal ovoid may form a wedge, the bulk of the head and feet together being too great to enter the pelvis. For the formation of this wedge it is necessary, as Galabin points out, for flexion of

the fœtal pelvis on the trunk to occur, since without this the feet only reach up to the shoulders.

In 17 cases of this presentation observed by us delivery took place naturally in 10. In 4 cases the breech ceased to advance, and aid was given. In 3 cases a foot was brought down early in labour for other reasons, and hence in these instances delivery was not effected with extended legs. In the remaining cases obstruction did not occur until the breech lay low down in the pelvic canal; at this stage delivery was always very slow, each pain only causing a slight advance, and still all the cases were delivered without artificial aid.

In several of the cases internal rotation was incomplete, and usually did not occur until the breech lay close to the vulval orifice. Unfortunately, in many cases no exact record was kept of the period and degree of internal rotation.

Duration of labour.—The duration of labour in these cases varied within such wide limits that from the small number of cases no definite conclusions can be formulated. The second stage, however, if no aid is given, is usually prolonged somewhat beyond the average time in primiparæ. The average duration of the second stage in eight primiparæ in which it was accurately observed and where no aid was given, was a few minutes over three hours.

Frequency.—Pelvic presentations with extended legs are very frequent. In a series of 500 consecutive cases of labour at Queen Charlotte's Hospital, the pelvic extremity presented in twenty-two cases. Of these eleven were presentations with extended legs, thus giving a frequency of 50 per cent. in breech presentations. These presentations are said to be more frequent in primiparæ. In this series the figures are primiparæ 11, multiparæ 6. If to these we add the cases recorded by Budin, Henrionnet, and Ollivier, we find that out of a total of fifty-seven cases, forty occurred in primiparæ and seventeen in multiparæ. From this it appears that 70 per cent. of the cases were in primiparæ. Out of the

seventeen cases the child was observed to draw up its legs in the extended position after birth in five. In these cases, then, there is no doubt that the presentation was primary, though, as we have seen, it is possible that in some of the cases where the legs were flexed after labour, the presentation was still a primary one.

Prognosis with regard to the child.—It is evident that the complete breech presentation is the most favourable for the child, since the soft parts are well dilated, and, further, if at any time aid is required, a foot can more readily be reached and brought down. Authorities agree in stating that in pelvic presentations with extended legs the risk to the child is much increased (Leishmann, Tarnier, Dubois). So far, however, as the small number of cases recorded here show, the prognosis is not worse than the ordinary breech presentations. Thus, of seventeen cases in which the child presented with the legs extended, three only were stillborn. In two of these cases labour was induced for contracted brim, and death was due to delay in extracting the head (Nos. 2 and 8). In one of them, however, a foot was brought down early in labour, so that delivery was not effected with the legs extended. In the third case (No. 3) the mother was a primipara thirty-three years of age, and the child was above the average size, weighing 7 lbs. 8 oz. In this case also the breech was born without any interference; the arms, however, became extended above the head, thus causing delay in extraction. It would seem, then, that the mere prolongation of the second stage has not any very serious effect on the life of the child, and that the risk is more especially found in the difficulties met with during extraction of the head.

Management in advanced pregnancy.—We have seen that if an opportunity for examining a patient before the onset of labour occurs, the diagnosis of a pelvic presentation with extended legs can be made. The question then arises as to whether any treatment should be adopted at the end of pregnancy or very early in labour. Numerous writers (Pinard, Budin, Spiegelberg, &c.)

express themselves in favour of performing cephalic version in all breech cases before labour comes on. The mortality of these cases is so high, varying in different statistics from 1 in 11 to 1 in 3 of the children, that cephalic version would appear to be justifiable. This can no doubt readily be accomplished if the breech is not engaged in the brim. If, however, as in the primary form with legs extended, the breech is lying engaged in the pelvis, version is usually difficult or impossible. Henrionnet mentions several cases in which cephalic version was attempted, but always unsuccessfully. It has been suggested by Ollivier that if the woman were placed in the knee-elbow position it might be possible to raise the breech out of the pelvis sufficiently to perform version, one hand being introduced into the vagina. There are not as yet any cases published in which this has been successfully accomplished.

During labour.—If the diagnosis of extended legs has been made early in labour before the breech has descended low into the pelvis, many authorities have advised that a foot should be brought down as a prophylactic measure (Ahlfeld, Spiegelberg, Ollivier). The object of this is to avoid the complications occasionally met with during the descent of the breech, viz.—(1) the formation of an obstructive wedge, (2) the impaction low down due to the difficulty in lateral flexion. This prophylactic reduction of the foot is not generally advised by English authorities. Herman gives the following as indications for bringing down a foot early in labour: (1) large size of child; (2) small pelvis; (3) prolapse of cord. There are certain disadvantages in this early bringing down of a foot in every case—(1) the hand must be passed up into the uterus, and often almost to the fundus; (2) chloroform is usually necessary; (3) there is some risk of causing prolapse of the funis, and consequently great danger to the child's life; (4) the soft parts are not so well dilated by the incomplete breech, and hence some difficulty may be experienced in extracting the head. If,

however, it is thought advisable to bring down a foot, there is a method of partial reduction which presents certain advantages, and is recommended by Bounaire. The foot is brought down and the knee flexed; the thigh, however, is not extended, but remains flexed on the abdomen, so that the presentation becomes one of complete breech. This proceeding effectually overcomes the rigidity of the trunk due to the legs acting as splints, and also increases the bulk of the presenting part, which thus acts as a better dilator of the soft parts.

The foot may be brought down by several methods. It is unnecessary in many cases to pass the hand up to the fundus uteri before seizing a foot. The procedure recommended by Mantel and Pinard is frequently successful. Chloroform is given, and the hand in the uterus is passed along the thigh of the fœtus until the popliteal space is reached. The thigh is then pushed outwards and backwards, abducting the thigh. This measure is usually followed by flexion of the knee, and the leg falling on the back of the operator's hand can readily be secured. Another method is to pass the hand into the uterus, with the palm directed posteriorly, between the anterior thigh of the fœtus and the front part of the pelvic arch. The thumb is placed in the popliteal space; the knee is now flexed by the pressure of the fore and middle fingers on the anterior part of the tibia. These plans, however, fail in some cases. They are most likely to be successful when the extension of the legs is secondary. In the primary form there is usually some rigidity of the knees, and the uterus is accurately moulded to the shape of the child. If these measures fail, it is necessary to pass the hand up to the fundus and to seize a foot. If the knees are ankylosed, as in the rare cases of genua recurvata, it may be impossible to bring down a foot.

In the cases recorded here, prophylactic reduction of the foot was never done unless there were some special reasons for it. In three cases a foot was brought down early in labour, the breech being high in the pelvis. The method

of Pinard and Mantel was used successfully in two cases. In one case the exact procedure is not noted. It will be seen that the cases were exceptional.

Case 1.—Labour induced at eight months for a flattened pelvis. True conjugate 3·2 inches.

Case 4.—A primipara. The child appeared to be very large ; the breech remained high in the pelvis. The infant weighed 8 lbs. 3 oz., and was alive.

Case 15.—A primipara. True conjugate 4 inches. The child was very large, and the breech did not descend. The infant weighed 8 lbs. 5 oz., alive.

In all these cases the foot was brought down completely into the vagina. In the other cases, fourteen in number, it was never necessary to bring down a foot, as the breech descended well through the upper part of the pelvis.

Management if there is delay in cavity of pelvis, or at the pelvic outlet.—In most cases of this presentation the breech descends through the upper part of the pelvic canal without any difficulty. Obstruction may then arise, due to—(1) the fœtus forming a wedge, the bulk of the head and feet together being too large to enter the pelvic brim ; (2) the limbs acting as splints, and thus preventing lateral flexion. As a result of the latter cause the posterior buttock is with each pain firmly pressed against the posterior vaginal wall and the perinæum in the direction of the axis of the pelvic brim.

Numerous methods have been advised to effect delivery of the breech in these cases.

1. It has been advised that a foot should still be brought down (Barnes, Galabin). It is said to be always possible to pass the hand up between the breech and the walls of the vagina to bring down a foot, even if the breech is lying low in the pelvis. In some cases, however, if the child is large there is not room in the pelvis to allow of flexion of the thigh. In eighteen newborn infants measured by Bounaire it was found that the average length of the thigh was 12·8 cm. The various pelvic diameters do not usually exceed 12 cm. if allowance

be made for the thickness of the soft parts. Thus there would be insuperable difficulty in extending the thigh on the pelvis. If, however, the hand can be passed up to the knee, it is usually possible to effect partial reduction of the leg, inasmuch as the knee is still above the pelvic brim, even if the buttock lies low in the pelvis. This partial reduction is quite sufficient to prevent the formation of the obstructing wedge, and also to allow of lateral flexion. This procedure is strongly advised by Bounaire, and is practised by Tarnier.

Use of forceps.—Ollivier, who states that artificial reduction of the foot is frequently impossible, advises the use of Tarnier's axis-traction forceps to effect delivery in these cases. He has made numerous experimental researches on the subject. He states that the blades should be applied over the thighs of the fœtus at the extremities of the bi-trochanteric diameter. He records numerous cases in which delivery was successfully accomplished in this way without causing any injury to the mother or child. He acknowledges that the blades frequently slip, and they may have to be reapplied several times before delivery can be effected. Forceps are, however, seldom used for this purpose in this country, and were not applied in any of the cases recorded here.

Use of soft fillet.—If a fillet can be passed over the anterior thigh, or if, as is better, it can be made to encircle both thighs, firm traction can be made and delivery is easily effected. In three cases when the breech was delayed in the lower part of the pelvis, a soft fillet was applied, and in each case the child was readily delivered. No special apparatus was used. The ends of a handkerchief were passed from without inwards over each groin, and the loop was then slipped above the iliac crests and over the sacrum. In one case, when the pains were feeble, a finger was hooked into the anterior groin and slight traction was made, the breech being born easily.

Use of blunt hook.—This is, no doubt, often very effectual, but there is considerable risk of injuring the soft parts of

the child. It was never found necessary in these cases. Lefour states that in most cases in which there is delay at the outlet of the pelvis, it is due to the posterior buttock being pressed against the perinæum in the direction of the brim. He recommends that two fingers should be passed into the rectum, and pressure made towards the pubes. At the same time a finger or a fillet should exert traction on the anterior groin. He states that this manœuvre is uniformly successful. Pressure applied in this way is often useful as an adjunct to the other methods of exerting traction.

Summary of Conclusions.

1. The extension of the legs in incomplete breech presentations may be either primary or secondary.

2. In the primary variety, which occurs before labour has begun, the breech engages readily in the brim and the diagnosis can be made.

3. In the secondary variety the extension occurs during labour. This form is more frequent than the primary.

4. This complication is more frequent in primiparæ, viz. 70 per cent. of the cases.

5. The prognosis, with regard to the child, is not worse than is that of pelvic presentations in general.

6. Cephalic version is advantageous before labour is advanced. It is not usually possible in the primary, but may be so in the secondary variety.

7. Most cases are delivered naturally.

8. Prophylactic reduction of the leg is only required in exceptional cases.

9. It is probable that flexion of the leg on the thigh is preferable to bringing down the leg into the vagina.

10. If aid is required in the lower part of the pelvis, the soft fillet will usually effect delivery.

Literature.

Budin. 'Obstétrique et Gynécologie,' p. 408, *et seq.*
Tarnier. 'Traité d'Accouchements,' p. 201, *et seq.*

Ribemont. "Recherches sur l'Anatomie topographique du fœtus," 'Thèse de Paris,' 1878.

Pinard. 'Traité du palper Abdominale.'

Lefour. 'L'Étude des présentations du siège décomplété, mode des fesses,' 1882.

Ollivier. "De la conduite à tenir dans la présentation de l'extrémité pelvienne, mode des fesses," 'Thèse de Paris,' 1883.

Henrionnet. "De l'engagement de l'extrémité pelvienne pendant la grossesse," 'Thèse de Paris,' 1884.

Spiegelberg. 'Text-book of Midwifery,' vol. i, p. 246.

Herman. 'Difficult Labour,' p. 40.

Galabin. 'Manual of Midwifery,' p. 577, *et seq.*

Barnes. 'Lectures on Obstetric Operations.'

Bounaire. "Artificial Reduction of the Foot in Breech Presentation," 'Medical Week,' 1890, pp. 440–43.

Dr. Amand Routh congratulated the authors on their very valuable paper. He doubted very much if their statement that the prognosis as regards the child was no worse when the legs were extended than in ordinary breech cases was correct. This might be so in a hospital, where an exact diagnosis would be made early in labour, but in general practice he believed the result was very different. He had seen cases where a correct diagnosis of the cause of the delay had not been made, and others where a diagnosis had been made, but efforts to bring down the legs had failed, and the usual result of such delay was fatal to the child. He also disagreed with the conclusion to which the authors had come, that flexion of the leg on the thigh is preferable to bringing down the leg into the vagina. He thought the reverse was the case, and observed that the authors had not carried out this partial method in any of the cases recorded by them. He also thought that prolapse of the cord in breech cases was not so serious as has been stated in the paper, certainly not nearly so serious as in vertex presentations.

Dr. Roberts thought the paper a most important one, especially as little was said about it in text-books. Dr. Roberts asked the authors if they could explain the cause of the curious primary extension of the legs in these cases, as nothing had been written at present on the matter. With reference to these cases Dr. Roberts thought that the question of diagnosis was very important, and asked if this were always possible and certain, because it was evident that interference was necessary in such cases. The question arose, When ought we to interfere? Dr.

Roberts congratulated the authors on the small mortality of their cases; with regard to the children, Dr. Roberts had been led to believe that the mortality was very much higher. With regard to the difficulty of extraction, he believed most cases of impaction were due to extension of both legs, but a few to large children and some to pelvic contraction. He asked the authors if in their cases the pelvis had been measured. As to the treatment, he thought that conclusion (9) would not be admissible in most cases, since such cases would probably only be recognised late, and that in most cases the hand would then have to be passed to the top of the uterus, and the leg brought into the vagina, as was usually done. He asked also if the authors in any way advised forceps to the breech, which was not generally taught as good treatment. Also if they advised that the blunt hook should be used if the child were certainly alive, as it was a dangerous instrument. Dr. Roberts thought a last resource would be cutting off the anterior thigh. He was glad to hear conclusion (7); it had not been his experience. He asked the authors (as to Case 3) why the child described as "very blue" had not recovered? and if such asphyxia had been due to the so-called "cord pressure," as Dr. Roberts thought such cases of asphyxia in delay of the after-coming head were rather due to interference with the placental circulation, for the uterus was already half emptied and the placental circulation had probably ceased, and therefore the child made efforts to breathe; cord pressure could not then matter. In Dr. Roberts's experience most of these very blue children recovered, while the "pale" cases of asphyxia did not.

The PRESIDENT said that he had seen a case of primary extension of the legs with vertex presentation lead to difficult delivery. A patient with a normal pelvis and a small child fell in labour, which could not be terminated by natural efforts. On examination a presentation of the vertex in the first position was found, together with presentation of the left arm and the left foot. He suspected twins, and thought that the foot at least was contributed by a second fœtus. The child was delivered by forceps, and no twin was present. The legs after birth lay on each side of the neck. The difficulty did not always occur low down, and might even cause delay of the first stage. In such a case, when the breech was at or near the brim the ordinary signs derived from the low position of the maximum intensity of the heart-sounds might be absent. In any such case, where delay occurred high up during the first stage, a careful examination should be made under an anæsthetic, and the anterior leg brought down. In this connection he agreed with Dr. Amand Routh that it was wiser to secure the leg, than merely to flex the legs and trust to fortune that secondary extension of the leg (which was commoner than primary) might not afterwards occur and cause

difficulty. The newness of the subject might be illustrated by the fact that so careful and learned an observer as the late Dr. Matthews Duncan told him that he had never seen a case of primary extension of the legs. As to the question when to interfere, interference should always be resorted to when, in a case of breech presentation, delay took place at any stage, even in the first stage. The paper illustrated the fact that the subject is still not thoroughly understood. It might be thought that the cases of difficulty would be those of large children, contracted pelves, and primiparæ. But, on the one hand, many large children were delivered easily; many primiparæ, even with large children, experienced no difficulty, and contracted pelvis accounted for a very small number of difficult cases. On the other hand, difficulties not infrequently occurred with normal pelves and small children. No doubt primiparity, with tensely distended, undilated soft parts, furnished a very formidable additional obstacle in difficult cases, and some of the most difficult deliveries which he had had to deal with had occurred in cases of extension of the legs with large children in primiparæ. There must be another cause of difficulty, and his experience had made him notice the great difference in stiffness of the legs in different children. In some large children the legs were quite lissom, and were easily moulded, while in some smaller children they were stiff and intractable. This was a difference which must depend upon the observer's trustworthiness, and could not be measured by formulæ. He had not seen it referred to. He rather disbelieved in the wedge theory. In some books the fœtus was drawn in the shape of a letter V, and this was the explanation of the mechanical difficulty. But he had never seen a child in the shape of a V. As regards the explanation of the difficulty by the presence of the feet with the head in the brim, his experience was that this was not the time of the occurrence of the difficulty, and that if the breech had descended low enough for the head and feet to be in the brim, the legs and feet could easily be brought down. One mode of delivery was not insisted on in any book that he knew, though it might be mentioned casually—that was pressure from above. In any really difficult case where the breech was too low for the bringing down of a foot, this pressure, applied judiciously and firmly by a skilled assistant, the patient being in the lithotomy position, was of the greatest service, and he always used it. Such cases required emphatically a second pair of skilled hands.

Dr. SPENCER did not think that primary extension of the legs could be diagnosed from the fact that they assumed that position after birth. The great majority of children tended to extend the legs after a difficult birth in that position; but he did not think it proved that the limbs had occupied this position before labour. The child presenting by the breech was known not in-

frequently to lie with its legs stretched out towards various parts of the uterus; but he did not think the feet were forced up to the shoulders till labour occurred, except in the rare cases of genu recurvatum—in which, however, the joint was not ankylosed, as he understood the authors to state, but subluxated. He did not agree that the prognosis was not worse than in ordinary breech presentation. The labours were more difficult, and he had shown in a paper read before this Society, by necropsies on five children born in this position, that they were liable to very severe visceral injuries. The largest hæmatoma of the liver he had observed in about 300 necropsies was apparently caused by the pressure of the thigh upon the organ in one of these cases. The child also ran a considerable risk of injury to the soft parts, the hip-joint, and femur, which he had known to be fractured in three instances. The forceps had not been recommended by the authors, but it deserved the strong condemnation which Ramsbotham had meted out to it fifty years ago, and should, in his opinion, never be applied to the breech of a living child. And he did not regard the soft fillet (a handkerchief) used by the authors with approval. It had been known to cut deeply into the thigh and to lame the infant. A better fillet was, he thought, a piece of tape run through a tube of rubber. But personally he had never failed to deliver by abdominal pressure, and traction on the groin by the fingers in the easy cases, and by bringing down a leg in the difficult ones, and these methods had never in his hands caused injury to the child. The most important point about the treatment of labour with breech presentation was to avoid it. This could be done in most cases with great ease by performing external cephalic version at the end of seven and a half months of pregnancy. This he had been doing for the last few years, mainly on the recommendation of Professor Pinard, with very satisfactory results.

Dr. Boxall agreed that we are far from understanding the cause of primary extension of the legs. In two cases he had observed that not only were the feet thrown up to the shoulders immediately after birth, but the pelvis was at the same time bent on the trunk and the spine arched, the infant having apparently the intention of turning a somersault backwards. From this he concluded that the trunk muscles were sometimes affected in addition to those of the lower limbs.

Dr. Lea stated, in reply, that most of the cases were observed at Queen Charlotte's Hospital, and that the favourable termination in some instances was probably due to the fact that the patients were under observation, and the condition was recognised early in labour. Interference was never undertaken unless the breech had ceased to advance. The cause of primary extension of the legs is by no means clear. In reply to Dr. Roberts, he regretted that an accurate record of the true conjugate was not made in

every case, but three of the patients had some contraction at the brim. Extension may come about from movements of the legs during the later months of pregnancy, and it is noticeable that in primary cases the liquor amnii is usually scanty. Hence the legs, if once extended, tend to remain so, owing to the incomplete breech descending into the pelvis, and to the uterus being moulded closely over the body of the fœtus. The amount of difficulty met with in delivery does not depend solely on the size of the child. He thought that slight variations in the curvature of the lower part of the sacrum and coccyx, together with differences in the length and rigidity of the perinæum, were important factors. He did not consider that the legs, after reduction of the foot, were likely to again become extended, inasmuch as in these cases the breech was usually well engaged in the pelvic cavity, and the foot after reduction would be well below the brim of the pelvis. He had no experience of the use of forceps or the blunt hook, as he had always effected delivery with the soft fillet or the index finger in the groin. In reply to Dr. Spencer, he had not observed any injuries to the soft parts caused by the fillet. The handkerchief or bandage should be lubricated before it is applied, and should be passed round both groins if possible. In one of the cases in which thec hild was stillborn, extensive hæmorrhage was found on the meninges and at the base of the brain.

ANNUAL MEETING.

FEBRUARY 3RD, 1897.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—62 Fellows.

Books were presented by the British Balneological and Climatological Society, the American Gynecological Association, Dr. Herrgott, Dr. Playfair, and Mr. Butler-Smythe.

J. D. Rawlings, M.B.Lond.; Louis G. E. Carré, M.D.; William Gladstone Clark, M.A.Cantab., M.R.C.S.; Sidney Arthur Mugford, M.R.C.S., L.R.C.P.; E. Laming Evans, M.B., B.C.Cantab., were admitted Fellows of the Society.

The following gentlemen were proposed for election :—Joseph William Williams, M.R.C.S.Eng., L.R.C.P.; George Porter Mathew, M.B., B.C.Cantab.; William Murray Leslie, M.D.Edin., F.R.C.S.Eng.; Harold Jäger, M.B.Lond.; Arthur Francis Stabb, M.B., B.C.Cantab.; Alfred Bienemann, M.B., C.M.Edin.

FIBROMA OF THE OVARY; IMPACTION; ASCITES; REMOVAL.

Shown by Mr. ALBAN DORAN.

S. B—, aged 49, married twenty-three years, eleven children, last confinement eleven years ago, consulted Dr. Chill in January, 1896, and he detected a tumour in the hypogastrium. On January 31st he sent the patient

to me, and I made out an extremely hard mass which rose just above the pelvis; it was almost fixed. The sound passed 3½ inches forwards, and the uterus was fixed. I pressed on the tumour, and it at length moved up.

I diagnosed "impacted fibroid," which was correct to a certain extent, but the tumour proved to be ovarian, not uterine as I suspected at the time.

The tumour grew slowly till last autumn, then the patient found that the abdomen increased rapidly in size. She was admitted into the Samaritan Hospital on December 31st, 1896. I saw at once that the distension of the abdomen was due to ascites. The circumference at the umbilicus was 46 inches, though the patient was not a big woman. The parietes were œdematous, the subcutaneous veins moderately dilated. The hard tumour, which reached to within an inch of the umbilicus, floated about, or rather, when it was pushed a kind of ballottement could be felt. The uterine cervix lay far back; both fornices were quite free. The sound passed nearly 4 inches. I now found that the uterus seemed to rotate almost independently of the tumour. I began to suspect that the fibroma was ovarian, chiefly on account of the partial independence of the tumour from the uterus, and the presence of dropsy. There was no evidence of visceral disease. The catamenia had ceased for nearly two years.

On January 12th, 1897, assisted by Mr. Targett, I removed the tumour. The pedicle was extremely short, and over 5 inches broad. It had, so to speak, three planes: a broad layer of peritoneum, forming a special ovarian mesentery, standing back from the mesosalpinx (this condition is not rare in very short pedicles); secondly, the mesosalpinx, much elongated; and lastly, the ovarian ligament, 3 inches long; it had formed for itself a deep fold.

I secured the ovarian vessels, which lay on the outer edge of the first plane, with No. 2 silk, then I transfixed the inner half of the pedicle with No. 4 silk well below the mesosalpinx, and tied it firmly, including the left

uterine cornu. The tense pedicle was unavoidably split during these manipulations. I tied the outer half separately with No. 4 silk, including the groove made by the ligature on the ovarian vessels. This method, after Penrose,* is preferable to interlacing ligatures, which in very broad pedicles often involves more splitting. The tumour was now cut away; it weighed 4 lbs. 7 oz. Two large arteries on the cut surface of the inner pedicle spouted till I drew the ligatures very firmly. As an extra precaution I fixed dressing-forceps on their gaping mouths, and left those instruments in place till all the sutures had been applied. Then the wound was closed.

The patient did well from the first, and has now practically recovered. Mr. Targett examined the tumour, and found that it was a pure fibroma, with a cavity in the centre from breaking down of tissue.

Had it not been for the shortness of the pedicle, which bore big vessels externally and internally, the operation would have been easy. The process of ligature, with the solid uncollapsible tumour in the way, was difficult, even though I cut through the outer border directly the ovarian vessels were secured. There were no adhesions.

This case, of which I was thinking when I spoke on Dr. Hubert Roberts's specimen exhibited last month, just before I operated, illustrates the fact that ascites is quite frequent in ovarian fibroma, whilst in uterine myoma, also a hard and heavy tumour, it is decidedly rare, even when the myoma is pedunculated. In this case the ascites was unusually marked, I feared papilloma or malignancy. As usual, the patient suffered little pain.

Just before the operation the uterine cavity measured 4 inches. This was due to the extreme shortness and breadth of the pedicle and the shape of the solid tumour, which lay with its transverse and longest diameter (over 8 inches) across the pelvic brim. Thus the body of the uterus was exposed to constant and increasing traction.

* "The Ligature in Oöphorectomy," 'Amer. Journ. Obstetrics,' vol. xxxii, 1895, pp. 221 and 290.

Let it be remembered that the uterus only measured 3½ inches a year before operation, when the tumour was impacted, for under that condition it was not dragged upon, nor was the tumour and its pedicle so developed as at the time of the operation. In Case 11 in my communication on "Fibroma of the Ovary and Ovarian Ligament," the patient was a virgin aged twenty-four, and the uterus measured 3¼ inches. This elongation I found to be due to twisting of the pedicle. The solidity of a fibroma makes it a good fixed point for traction. I dwell on this question, the increase of length of the uterus, as it is liable to make the observer believe that the ovarian tumour is uterine, and such an error of diagnosis, not so excusable in the case of the girl of twenty-four, is very natural in the present instance, where the patient was forty-nine.

Impaction of an ovarian tumour with a true pedicle is certainly rare.

LIPOMA OF THE LUMBAR REGION, FOUR POUNDS IN WEIGHT, AND OF TWENTY YEARS' GROWTH.

Shown by Mr. Alban Doran.

M. A. C—, aged 55, married thirty-four years, ten children, applied to me at the Samaritan Hospital in October, 1894. I had first seen her as long ago as 1876, when surgeon to the Metropolitan Dispensary, Fore Street, E.C. Then she had a small fatty tumour in the left loin, its centre lying in the axillary line; it lay obliquely, and measured about 3 inches in length. It had existed for several years.

In June, 1891, I saw her again; she brought her daughter to me for the removal of an ovarian tumour. The younger woman was a spare subject, aged thirty-one, and had borne two children. The mother, now very

corpulent, was not much troubled with the fatty tumour, which had grown very slowly, so that it was hardly twice as large as in 1876.

After this second visit, however, the tumour began to grow very rapidly, especially between 1893 and 1894.

On October 17th, 1894, it formed an enormous pyriform mass which reached from the outer border of the left erector spinæ forwards to midway between the umbilicus and the left anterior superior iliac spine. Laterally and posteriorly it formed a prominent mass standing outwards from the surface of the body around; hence it was very unsightly, and could not be concealed by clothes. It measured 19 inches in its long axis downwards and forwards, by 10½ inches vertically at its most prominent part below the last ribs. The subcutaneous vessels were much dilated, but the skin was not adherent. The tumour was elastic, and distinctly lobulated. The abdomen was greatly distended with flatus and fat omentum. On percussion over the tumour, notwithstanding its thickness, there was clear resonance.

On October 23rd, 1894, I removed the tumour. The parietes were very thick with fat, the vessels supplied to the tumour rather large. The tumour was subcutaneous, lying on the external oblique muscle; its removal proved perfectly easy. The cavity left after its extraction was washed out with 1 in 2000 sublimate solution, and drained for two days. The operation was easy, and recovery rapid.

The specimen, as you see it, looks like an enormous ox-tongue, owing to its linguiform projection forwards. Its precise weight when fresh was 3 lbs. 15¼ oz., some masses of fat in its posterior part being removed separately at the operation; the full weight was a little over 4 lbs.

Fatty tumours of the loin are certainly more frequent in women than in men. I have often detected them over the lower ribs, or towards the ilium. Is the pressure of stays an exciting cause? Or is the cause unknown, and possibly the same as that which causes fibroma of the abdominal walls more anteriorly?

FIBROMA OF THE ABDOMINAL WALL; INCREASE DURING PREGNANCY.

Shown by ALBAN DORAN, F.R.C.S.

MANY observers agree that this kind of tumour is very common in women and rare in men. I have noted elsewhere* that the attention of surgeons who operate exclusively on women is keenly directed to the abdomen, and certain circumstances encourage them to record long series of abdominal operations; hence they are not likely to overlook fibromata of the abdominal wall. Perhaps some cases in males are overlooked. There can, however, be no doubt that this disease is most common in women; and the opinion of the Society on this matter would be of great interest to me.

J. C—, aged 32, married ten years, five children, youngest five weeks old, was the patient from whom this tumour was removed by me on November 13th, 1896. It had been first noticed by the patient in December, 1895. I examined it a month later, making the following note: —"An oblong, hard swelling in abdominal wall close to left anterior superior spine of ilium, and long axis parallel to Poupart's ligament."

For years this patient has been employed at a boot factory, sitting on a chair, and working a treadle with both feet. It does not appear that the affected part was pressed upon, or in any way irritated when she sat at work.

In the spring of 1896 the patient became pregnant for the fifth time. I noticed that the tumour grew very appreciably during gestation. Its growth alarmed the patient, especially in the puerperium, when as the abdomen became reduced in size the increase in the bulk of

* "Case of Fibro-sarcoma or 'Dermoid Growth' of the Abdominal Wall," 'Trans. Med. Soc.,' vol. xiv, p. 337, 1891.

the tumour grew more evident. I operated, at her urgent request, five weeks after delivery, just one year after the day when I first examined the tumour, which had now grown over 2 inches in long diameter, and become much more bulky.

The operation presented no difficulties. I made a long incision parallel with Poupart's ligament, over the tumour dividing the skin and the aponeurosis of the external oblique. The tumour, as I expected, was incorporated with the internal oblique and transversalis. The peritoneum was exposed, but it did not adhere at any point. The conjoined tendon, whence the tumour evidently sprang, formed its pedicle. After completely enucleating the tumour, I united the cut edges of the internal oblique and transversalis with a continuous catgut suture. The wound in the aponeurosis of the external oblique was closed in the same manner. The integuments were united with interrupted silkworm-gut sutures ; no drainage was necessary. There was no trouble after the operation.

Mr. Targett reported the tumour as "a pure fibroma, arranged in interlacing bundles, and with early mucoid softening in places." It measures 3 inches in long diameter, 2½ inches antero-posteriorly, and 2 inches in vertical measurement, and is pyriform, pointed towards the conjoined tendon, smooth and almost flat anteriorly, but convex and slightly lobulated on its peritoneal aspect. It proved rather light for its bulk, weighing but 6 oz. The mucoid softening accounts for its lightness, and was probably the cause of its increase of size. How far the softening was the effect of pregnancy I cannot say.

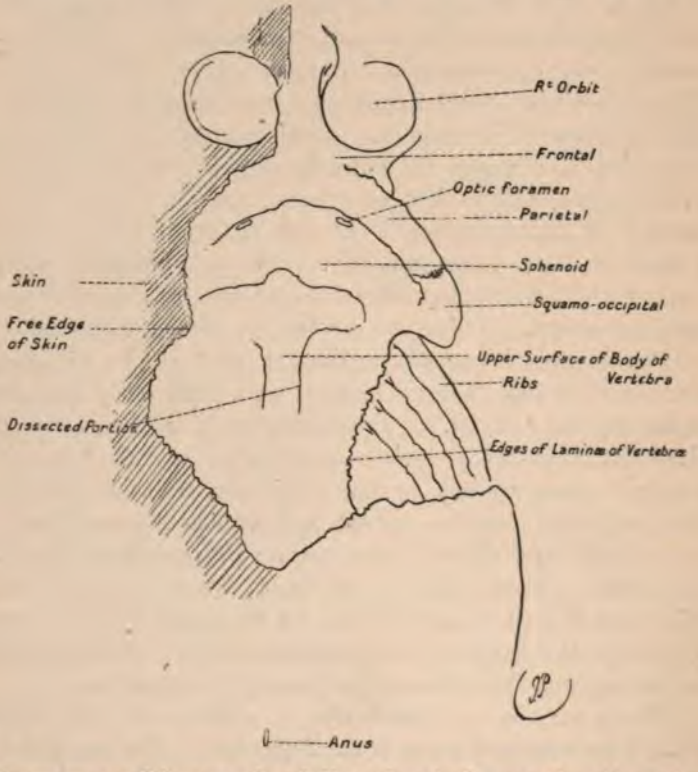
There can be no doubt that a tumour of this kind should be removed as soon as diagnosed. The smaller it is, the less will be the fear of hernia developing in the scar of the abdominal incision. When very large, a wide area of the parietes may require resection, and complicated plastic procedures are then rendered necessary to prevent (if possible) hernial protrusions, nor is such an operation devoid of danger.

FŒTAL MONSTROSITY,

Shown by Dr. JOHN PHILLIPS.

THIS fœtus was sent to me by my friend Dr. Ernest Goddard, and presents many points of interest.

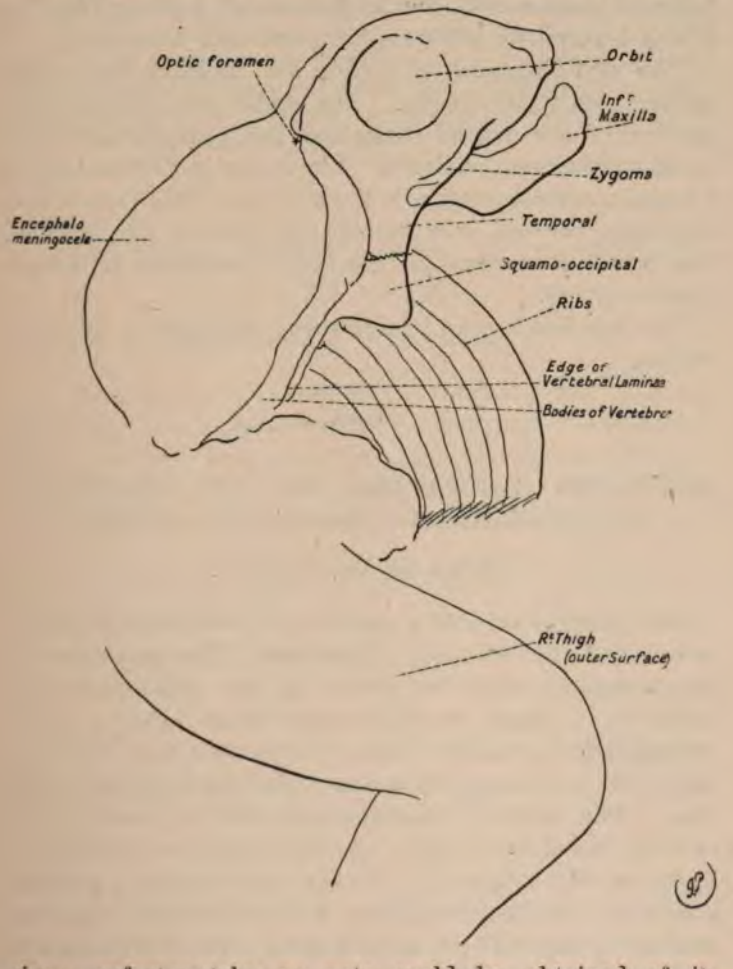
The mother, a young primipara, was delivered of this monstrosity at the seventh to eighth month of pregnancy;



there was a history of a fall at the sixth month, otherwise the history of the pregnancy is unimportant.

Obstetric history.—Labour commenced with copious hæmorrhage, which was found to be due to marginal placenta prævia; the amount of liquor amnii was very considerable. The fœtus presented by its face, but a

breech was suspected. Labour terminated naturally, with the chin to the anus, as in first vertex deliveries. The placenta was of irregular shape and of enormous



size; unfortunately, no note could be obtained of its weight. The fœtus was stillborn.

Description of fœtus.—The external appearance of the monstrosity is exactly as depicted by Ahlfeld ('Missbildungen des Menschen,' pl. xlviii, fig. 13), the characteristic

frog-like attitude being well seen. The tumour over the site of the occipital and upper spinal regions has been removed in the specimen, and consisted of broken-down brain substance with the various nerves passing from it; it was covered by a fibrous structure like dura mater.

The two diagrams in outline will indicate the results arrived at by dissection. The whole of the posterior portion of the cranial vault and the posterior vertebral laminæ are absent entirely. The lower jaw articulates in a fossa in normal relation to the zygoma. The generative, digestive, cardiac, and pulmonary systems are normal. The fœtus is a female; the heart contained a patent foramen ovale.

The left foot has an equino-varus, the right a calcaneo-valgus.

RUPTURED GESTATION IN AN IMPERFECT UTERINE HORN (*Uterus bicornis unicollis*).

Shown by Mr. TARGETT.

Mr. TARGETT showed a specimen of ruptured gestation which had the following characters. The gestation sac was connected with the cervix of the well-formed left cornu by a small rounded cord, which seemed to be traversed by a minute canal. This cord was 3 inches long, and represented the lower end of the right Müllerian duct. The evidence that the gestation sac was uterine and not tubal rested upon the facts that the right round ligament took origin from it, and that the sac possessed a normal right broad ligament with a Fallopian tube and ovarian ligament of the usual length. The left cornu was lined with a decidua, and its cervix plugged with mucus. Rupture of the sac was caused by vomiting, in consequence of the administration of an aperient draught, and was speedily fatal. The patient, aged 24, was in the fifth month of her first pregnancy.

Dr. GRIFFITH had carefully examined two similar specimens with the object of endeavouring to identify and trace the Müllerian duct or any channel of communication between the developed horn and the undeveloped one containing the gestation sac. The method he adopted was by microscopical sections through the whole thickness of the septum uniting them. He had failed to find any trace of such a canal in either specimen, and he placed no reliance on a bristle for this purpose, which would naturally find some passage along the bundles of muscle fibres, or along some vessel or nerve.

PYOSALPINX, WITH MULTIPLE ABSCESSES OF THE OVARY.

Shown by Dr. CULLINGWORTH.

Dr. CULLINGWORTH exhibited a specimen (removed by operation a few hours previously) consisting of the Fallopian tubes and ovaries. The right Fallopian tube was enlarged, tortuous, and completely occluded by adhesion of its fimbriated extremity to the surface of the ovary. Its diameter was 1 inch, and its length 4½ inches. Its lumen was dilated, and contained about ½ fl. oz. of greenish yellow pus, without odour. Its walls were ⅛ inch thick, pale and œdematous. The mucous lining was covered with granulation tissue without any trace of ulceration. The right ovary was enlarged, measuring 1⅞ inches by 1⅜ inches. On section it was shown to contain a large number of small abscesses, with walls of thick, opaque, whitish tissue giving them the appearance of degenerate corpora lutea. The intervening stroma was highly œdematous. The left Fallopian tube was less enlarged and less tortuous; its diameter was ½ inch. Its uterine end was slightly dilated. Its fimbriated end was occluded by adhesion to the ovary. The contents consisted of watery fluid, containing some mucus but no pus. Near its fimbriated end, on its outer surface, was a patch, about ½ inch by ¾ inch in measurement, covered with lymph and granulation tissue, where an adhesion had been separated.

Near it were two small subserous cysts. The wall of the tube was ⅛ inch in thickness, and œdematous. The mucous membrane was covered with lymph. The left ovary was enlarged and cystic; it measured 1¾ inches by 1½ inches. The stroma between the cysts was highly œdematous. There were no abscesses. Beneath the adherent abdominal ostium of the Fallopian tube there was a deposit of inflammatory lymph giving to that portion of the ovary an opaque appearance as of putty.

The patient was 40 years of age. She had been married nine years. She had had one child before her marriage, and had made a good recovery. There had been no pregnancy since her marriage. Her first attack of pelvic inflammation occurred on November 8th, 1894, and was supposed to be due to a chill caught whilst at the theatre on the 5th November. It affected chiefly the left side. She was in bed for two weeks; then she improved and got up for a week or two, but had to return to bed, where she remained altogether for about three months.

During this illness there was a purulent discharge from the vagina, supposed to be due to the bursting of an abscess. Sir J. Williams saw her, and diagnosed left ovarian inflammation, with surrounding thickening and hardness and some displacement of the uterus to the right. After this, a pessary was worn for retroflexion. In April, 1895, and again in August of that year, she had a recurrence of the pelvic inflammation. The pain appeared to affect the parts supplied by the *right* anterior crural nerve. In May, 1896, she had a fourth attack, accompanied with pain, shivering, vomiting, and tympanitic distension of the abdomen. The temperature rose to 101° and 102°. On June 12th Sir J. Williams again saw her, and advised that she should give up her millinery business. He drew a sketch showing that the physical signs were now chiefly on the right side, where there was a distinct swelling. She afterwards went to Woodhall. In November, 1896, another attack occurred, with pain chiefly on the right side. There was a rise of

temperature; on December 2nd it was 102·6°. She remained ill in bed until Christmas Day, when she was carried downstairs. Two or three days later she had again to keep her bed entirely. On December 30th the temperature rose to 103°; next day it had fallen to 99°. Dr. Cullingworth first saw her on January 6th, 1897. The cervix then moved freely, but the body of the uterus was fixed by adhesions. Examination was difficult owing to tenderness and rigidity. High up, above the vaginal roof on the right side, could be felt a fixed, irregular, hard swelling in the situation of the right appendages. There was a sense of resistance and fixation on the left side, but no definite swelling was made out.

Dr. Cullingworth stated it as his opinion that there was double salpingitis, with a collection of pus on the right side, either in the ovary or the tube, or in both. He advised an operation if the patient and her husband felt disposed to accept the immediate risk.

The general condition of the patient was good, and the temperature normal.

Operation was agreed to, and abdominal section was performed on the 3rd of February, with the result above described. Fortunately, no pus escaped during the manipulations.

Dr. Cullingworth said that he had exhibited the specimen chiefly on account of the interest attaching to the condition of the ovary. It was unusual to find a large number of small abscesses in the ovary, except in tubercular disease. In this case he believed the inflammation to be of gonorrhœal origin, the purulent vaginal discharge during the first inflammatory attack having probably been due, not to the bursting of an abscess, as was then supposed, but to acute gonorrhœa. In regard to the tubes, the specimen was typical of a late stage of tubal inflammation. Both tubes were thickened, and occluded by adhesion of the outer end to the surface of the ovary. The tube on the right side formed a pyosalpinx; that on the left, where the inflammation had been

originally less severe, a hydrosalpinx. There was little doubt that the condition of the right ovary was due to secondary infection from the adjacent tube.

The result of the operation showed that nothing short of complete removal of the diseased parts would have sufficed to give the patient relief.

The specimen would be mounted and placed in the museum of St. Thomas's Hospital.

Dr. T. G. STEVENS said that the multiple abscesses in the ovary were of great interest, as they looked as if they were suppurating Graafian follicles. He suggested that it would be of great interest to the Society if a microscopic section of the ovary could be shown.

Dr. EWEN MACLEAN asked if there were any decidual changes noted in the left horn.

Mr. GANDY asked Dr. Cullingworth respecting the previous history of his case, more especially with regard to the temperature, whether there was any sudden rise or fall, and from what date he noticed the first symptoms and their duration.

Dr. CULLINGWORTH, in reply to Dr. McCann and Dr. Stevens, said that he would be happy to report at a future meeting the result of an examination of the pus with reference to the presence of gonococci. He would also then state whether the patient had made the satisfactory recovery that he had at present every reason to anticipate.

ANNUAL MEETING.

The audited balance-sheet of the Treasurer (Dr. Potter) was read.

It was moved by Dr. HORROCKS, seconded by Dr. MCCANN, and carried—"That the audited report of the Treasurer just read be received, adopted, and printed in the next volume of the 'Transactions.'"

1896.	RECEIPTS.	£	s.	d.
To balance from 1895		243	18	4
On Deposit		300	0	0
„ (1) 18 Subscriptions for 1894				
89 Ditto ditto 1895	= 599 realising	628	19	6
481 Ditto ditto 1896				
11 Ditto ditto 1897				
„ (2) 2 Composition Fees at £10 10s.	£21 0 0			
4 Ditto at £5 5s.	21 0 0—	42	0	0
„ (3) Midwives' Examination Fees and Certificate for four Examinations (less half Fees returned = £8 8s.)		545	13	0
„ (4) Sale of 'Transactions'				
(Longmans)	76 17 3			
Do. do. (Society)	2 16 8			
Do. Dr. Champneys' Pamphlet; Midwives' Questions; and Infant Rules	0 12 7—	80	6	6
„ (5) Interest on Consols	53 16 9			
Ditto on Deposit	3 13 2—	57	9	11
Amount of Stock, 2¾ per Cent. Consols, standing in the names of the Trustees	£2100 0 0			

Audited and found correct, January 29th, 1897.

(*Signed*) E. RUMLEY DAWSON.
J. H. TARGETT.
D. FAIRWEATHER.
JOHN PHILLIPS.
W. R. DAKIN.

£1898 7 3

1896.	EXPENDITURE.	£	s.	d.
By (1) 'Transactions,' Vol. XXXVII, Printing, Paper, Binding, Delivery, Engraving, Lithography, &c.		239	16	10
„ (2) Library:				
Books Purchased	£31 11 4			
Binding	15 6 7—	46	17	11
„ (3) Museum and Library:				
Rent	200 0 0			
Salary of Librarian	120 0 0			
Repairs to Furniture, Cleaning, Coals, &c.	23 2 7½—	343	2	7½
„ (3A) Charge for Electric Light:				
Up to February, 1896, including laying new main, &c.	94 4 2—	94	4	2
„ (4) General Meetings and other Expenses:				
Expenses of Meetings	£39 7 1			
Stationery and Stamps	47 4 6—	86	11	7
„ (5) Examination of Midwives:				
Fees to Examiners	254 11 0			
General Expenses	68 12 3½—	323	3	3½
„ (6) Extraordinary Expenses:				
Printing copies of Dr. Champneys' Address	16 13 0			
Automatic Cyclostyle	3 5 0			
Present to Librarian	10 10 0—	30	8	0
„ (7) Banking Expenses:				
Commission on Cheques		2	9	
Purchase of £300 Stock		324	19	9
„ (8) Balance as per Bank Book		190	16	8
On Deposit		250	0	0
		1930	3	7
Less Cheque for £31 16s. 4d. not cleared		31	16	4
		£1898	7	3

Report of the Honorary Librarian.

I have to report that the Library is maintained in a very satisfactory condition by the Secretary and Librarian.

During the past year 135 volumes have been added, making a total of 5054 in the Library; of these, 21 were purchased, 51 were presented by the authors, and 63 are periodicals.

WALTER S. A. GRIFFITH,
Hon. Librarian.

It was moved by Mr. DORAN, seconded by Dr. RIVERS POLLOCK, and carried—"That the Report of the Honorary Librarian be received, adopted, and printed in the 'Transactions.'"

Report of the Chairman of the Board for the Examination of Midwives.

During 1896 the number of candidates who applied for the Society's certificate was 511, a larger number than in any previous year. Of these 511, 461 passed, 40 failed, and 10 were absent from the examination.

From 1872 to 1896 (inclusive) the total number of women who have entered their names as candidates is 3426. Of these, 2943 passed the examination and received certificates of having done so, 436 failed, and 47 were absent.

This being the last report it will be my privilege to present, I desire to add my testimony to that of my predecessors to the admirable manner in which my colleagues on the Examining Board have fulfilled their responsible duties; and I should also like to call attention to the marked improvement that has taken place in the class of women presenting themselves for examination.

CHARLES J. CULLINGWORTH.

Dr. GALABIN moved—"That the Report of the Chairman of the Board for the Examination of Midwives be received, adopted, and printed in the 'Transactions;' and that the cordial thanks of the meeting be given to Dr. Cullingworth, who now retires from the office of Chairman of the Board which he so ably filled, and where his loss will be much felt, though tempered by the fact that Dr. Cullingworth is to go to a higher sphere in filling the presidential chair." This was seconded by Dr. DRUMMOND ROBINSON and carried.

Chapter VI of Bye-laws as revised by the Council, on the motion of Dr. POTTER, seconded by Dr. BOXALL, was carried as follows:

"CHAPTER VI.

"OF THE ELECTION OF OFFICERS AND COUNCIL.

"1. The whole of the Members of Council, with the exception of the past Presidents and trustees who occupy a place on it *ex officio*, shall be elected annually at the Annual Meeting (see Chapter I, section 5, and Chapter VII, section 3).

"2. The President shall be eligible for election for two consecutive years. One Vice-President shall go out of office annually, and shall not be eligible for re-election to the same office for three years.

"3. Four of the Members of Council shall retire by rotation in order of their seniority on the Council. In addition to the Members who retire by rotation, any resident Member of Council who has not attended half the meetings held during the year, shall also retire.

"4. A list of the names of those nominated by the Council for election shall be prepared by the Honorary Secretaries, and transmitted to each Fellow by post, on or before the 14th day of December of each year, together with an explanatory extract from the Laws of the Society (Chapter VI, sections 4 and 5).

"5. If it be desired to propose any Fellow as Officer or Member of Council, other than those whose names stand upon the list recommended by the Council, the name of such Fellow, duly proposed by one Fellow and seconded by two other Fellows, shall be sent to the President before the first Wednesday in January, after which date no new name shall be proposed. It shall be the duty of the Honorary Secretaries, in the event of any such additional nominations being received within the specified time, to prepare and transmit to each Fellow by post, with the notice of the Annual Meeting, a Balloting list, containing (1) the names of those nominated by the Council, and (2) the additional nominations, specifying the post for which each Fellow is nominated, together with the names of his proposer and seconders.

"6. In the event of no additional nominations being received within the specified time, the President shall at the Annual Meeting declare the Officers and Members of Council, nominated by the Council, to be duly elected, no ballot being in such case necessary.

"In the event of a ballot being rendered necessary by additional nominations, the President or the Fellow presiding in his stead shall appoint from the Fellows present two or more scrutineers to superintend the ballot in its progress, to note the name of every Fellow voting, and when the ballot is closed to examine the lists and report the result in writing to the President, who shall announce it to the Meeting. In the event of equality of votes, the President or the Fellow presiding in his stead shall give a casting vote.

"8. In the event of a ballot being rendered necessary by additional nominations, every Fellow shall be entitled to vote either in person at the Annual Meeting, or by voting paper sent in to the President previous to the Annual Meeting as hereinafter set forth (Section 10).

"9. Every Fellow voting in person at the Annual Meeting shall erase superfluous names from his balloting

list, leaving not more than the number of names required, and shall fold it up and deliver it up to the scrutineers.

"10. Every Fellow voting *in absentiâ* shall erase superfluous names from the balloting list, leaving not more than the number of names required, shall enclose his voting paper in a closed envelope, shall sign his name and address on the envelope for purposes of identification, and shall enclose this envelope in another directed to the President not later than the day before the Annual Meeting. After identification of the Fellow's name and address the envelope marked with the name shall be destroyed, and the voting paper put into the ballot box at the Annual Meeting, and examined by the scrutineers.

"11. The Council shall have the power of filling up any vacancies which may occur in any of the offices of the Society, until the Annual Meeting."

The PRESIDENT then delivered the Annual Address.

ANNUAL ADDRESS.

GENTLEMEN,—The Fellows of our Society number 741, of whom 14 are Honorary and Corresponding Fellows. This number is exactly the same as it was at the end of 1893. Last year our Fellows numbered 779, and the reduction is made up as follows:—Deaths 10, resignations 27, erasures 27, total 55; against which are to be balanced 17 new Fellows—or a net reduction of 38. The new elections almost exactly balance the resignations; the deaths speak for themselves. The large number of erasures require a few words of explanation. They really are the accumulation of three years, for such a revisal of our list has not taken place for that time. A Fellow who neglects to pay his subscription is written to repeatedly, and is only removed from the list when it is quite certain that his neglect to pay is due to other causes than inadvertence, or absence from England. On the other hand, it is our wish to make our list as accurate as possible, and not to swell our apparent numbers by retaining the names of gentlemen who have really ceased to belong to our Society. It is found that a considerable proportion of defaulters is furnished from the newly-joined.

During 1896 the number of candidates for the Society's certificate in Midwifery has still further increased, having reached the total of 511. This is by far the largest on record, though each year shows a remarkable increase.

In 1886	the number was	102		
„ 1887	„	127, or an increase of		25.
„ 1888	„	153	„	26.
„ 1889	„	170	„	17.
„ 1890	„	207	„	37.
„ 1891	„	258	„	51.

In 1892	the number	was	289, or an increase of	31.
,, 1893	,,		339 ,,	50.
,, 1894	,,		432 ,,	93.
,, 1895	,,		467 ,,	35.
,, 1896	,,		511 ,,	44.

On this subject there is nothing to record in the way of controversy, and the Society has been left in peace to follow its beneficent work.

You have already heard the details of the work of the Midwifery Board during the past year, in the Report of the Chairman.

You have agreed to a revision of the chapter in the Laws relating to the election of Fellows. As I said earlier in the evening, no real change has been made this year; the apparent change has simply consisted of the re-arrangement of the order of certain sections, for convenience and logical sequence, and in the incorporation of the direction for recording votes, which was in use last year, by the will of the Society, but has now been embodied in the Laws.

On this occasion, no amendments having been received within the specified time, nor indeed at all, the gentlemen on the list proposed by the Council have been declared elected, in accordance with the Laws.

Review of the Work of the Society.

The work of the Society during the past year has been interesting and varied.

In January Dr. Cullingworth showed a case of supposed tubo-ovarian cyst. The cyst was unilocular, and communicated with the Fallopian tube by an opening of the size of a pencil; in one part of its walls ovarian tissue with Graafian follicles was seen. The patient, aged 31, had been thirteen years married, and had never become pregnant. Menstruation had been increasingly painful from the first, especially since marriage. The symptoms had not been otherwise prominent till a few weeks back,

when there had been aching in the swelling; and a few days before operation, micturition had been painful.

Mr. Doran pointed out that a tubo-ovarian cyst was hard to distinguish from a large hydrosalpinx; as in an old hydrosalpinx the outer part was bent on the uterine part, and became greatly dilated, the plicæ being obliterated, while in the uterine part they persisted, and projected into the dilated part as fimbriæ, simulating the "morbus diaboli."

A Committee reported that this was really the case in the present instance.

Mr. Stabb showed for Dr. Griffith a placenta velamentosa; and also a placenta weighing 3 lbs., from a case of labour at the seventh month, the fœtus being macerated.

Dr. Genge showed a fœtus which had died about the end of the fifth month of pregnancy, and had been retained till about full time, when it was delivered together with a living twin.

Dr. Cullingworth showed a specimen of multiple fibromyomata of the uterus, and a large fibro-cystic myoma growing from the cervix uteri and filling the abdomen. The rapid growth and cystic nature of the tumour, the absence of enlargement of the uterine cavity, and the fact of its rapid growth after the menopause (the patient was forty-nine) made it seem probable before operation that the tumour was ovarian. On operation it was found that part of the fluctuating area was due to localised collections of ascitic fluid.

These specimens provoked a prolonged and interesting discussion.

Dr. Lewers showed a cancerous uterus with pyometra, removed by vaginal hysterectomy.

A paper was read by Professor Curatulo, of Rome, on the Influence of the Removal of the Ovaries on Metabolism in connection with Osteomalacia.

The author referred to the established fact that castration stops osteomalacia. He referred to various theories as to the cause of this; to Fehling's hypothesis of

removal of ovarian vaso-motor influence, leading to passive hyperæmia of bone, accumulation of carbonic acid, and reabsorption of earthy salts; to Petrone's theory that the good effect is due to chloroform rather than to castration, the chloroform destroying the *fermentum nitricum*, which he believed to be the cause of the disease, by dissolving the earthy salts out of the bone.

The author next referred to the results of castration in healthy animals, and especially to his experiments on bitches ('Edin. Obst. Trans.,' vol. xx, p. 123), which showed that castration greatly and for a long time diminishes the phosphoric anhydride in the urine, the quantity of nitrogen remaining unaltered. He believed this to be due to the abolition of an "internal secretion" of the ovaries which had the power of favouring the oxidation of the phosphoric organic substances which supply the material for the salts of the bones. The abolition of this solvent helped to fix these salts in the bones.

This view was confirmed by experiments in which ovarian juice was injected under the skin of castrated bitches, which was followed by considerable increase of the urinary phosphates.

In mice (*Mus musculus*) castration dimnished the elimination of carbonic anhydride.

Dr. Remfry read a paper on the Effects of Lactation on Menstruation and Impregnation.

His paper, founded on several hundred observations, arrived at many conclusions, which might be summarised thus:—only about one half of suckling women have absolute amenorrhœa; about one quarter menstruate regularly; lactation is not an absolute preventive to impregnation; impregnation is extremely rare in cases in which there is absolute amenorrhœa during lactation; the more regularly a suckling woman menstruates, the more likely is conception; the menses generally reappear within six weeks after delivery if a woman does not suckle at all.

At the February meeting Dr. Leith Napier showed a

specimen consisting of a solid ovarian tumour, a small subperitoneal uterine fibro-myoma, and the uterine appendages of the right side removed by abdominal section.

Dr. Kanthack regarded these tumours as simple fibromata. The case was referred to a committee, three of whom regarded the ovarian tumour as a spindle-celled sarcoma, while one regarded it as a spindle-celled fibroma, probably innocent.

Dr. Playfair showed a complete cast of the vagina, which had been shed from a case of enteric fever. He had found no record of such an occurrence, though in pre-vaccination days it was not very uncommon in malignant smallpox.

Dr. Playfair also showed a case of ruptured tubal gestation.

Dr. William Duncan showed a specimen of unruptured tubal gestation, and one of large double tubo-ovarian cysts.

Dr. Galabin showed a specimen of intra-ligamentous gestation retained for twenty-one years; the sac was completely calcified, but the fœtus was well preserved. He also showed a specimen of ruptured tubal gestation.

Mr. Harrison Cripps read a paper on Abdominal Hysterectomy with Intra-peritoneal Treatment of the Stump, with notes of eight cases.

The author enumerated the indications for hysterectomy on fibroids as follows:—(1) excessive hæmorrhage, uncontrolled by the ordinary methods of treatment, and in which oöphorectomy is impossible; (2) serious pressure effects on the bladder or rectum; (3) when the pain or the size of the tumour render the patient unable to earn her living.

He claims better results for the intra-peritoneal method, giving it as his opinion that, while sepsis is more likely, obstruction of the bowel or ureters is less likely. He believes sepsis to arise by infection from the vagina. In order to avoid it he lays stress on thorough and repeated douching of the vagina with perchloride of mercury before operating, and on careful closure of the stump by peritoneum.

The discussion on the paper was postponed to the March meeting, when a prolonged and very interesting debate ensued.

At the March meeting Dr. Galabin showed a specimen of extra-uterine fœtation, not necessarily tubal.

Dr. Amand Routh showed a specimen of fibroid tumour and cancer of the uterus ; also one of independent cancer of the body and of the cervix uteri.

Dr. Galabin showed an ovarian tumour containing a corpus luteum, and a uterine fibroid associated with carcinoma limited to a part of the intra-uterine surface of the fibroid.

Mr. Sydney Turner showed a hydronephrosis of the left kidney simulating an ovarian cyst, except that a coil of intestine was felt in front of it. It was, however, seen to be a hydronephrosis of the left kidney, on opening the abdomen, and was enucleated and removed. On the fourteenth day the patient, who had apparently got on perfectly well, suddenly died of syncope. The kidney was twice the normal size, and had two ureters. The left kidney had been twisted, as shown by the ureter, and this was probably the cause of the hydronephrosis.

Dr. Lewers showed a deformed fœtus with cystic tumour of the neck, and chorionic villi from a tubal mole already shown.

At the April meeting Dr. Spencer showed a speculum, and a skiagram of a sireniform monster.

Dr. Galabin showed specimens of sarcoma of the uterus, of myxosarcoma of the urethra in a child aged three, and microscopic sections of tissue removed from the uterus six months after a miscarriage at five months, which had been associated with persistent hæmorrhage. These microscopic sections showed chorionic villi with a curious proliferation of the trophoblast, so that it formed a network round the ends of the villi, consisting of protoplasm containing nuclei, and vacuolated in places. At another part bands of vascular fibre were seen infiltrated with a structure with large cells like decidual cells in some places,

and in other places with a small-celled fibrillated stroma. The villi showed signs of recent vitality, and it appeared that, penetrating the uterine wall more deeply than usual, they had stimulated the uterus to continued proliferation. The tissue removed at the operation was not like placenta, and was thought, from its naked-eye appearance, to be new growth. The patient had had no return of hæmorrhage, but the operation had only been done a few weeks. The specimen bore on the question of deciduoma malignum.

Dr. Cullingworth showed a ruptured tube and three weeks' embryo from the sac of an old pelvic hæmatocele.

The rest of the evening was devoted to the reading of papers bearing on the question of deciduoma malignum.

Mr. Malcolm read notes of a case of malignant disease of the uterus, with numerous deposits in the lungs, and death, following on abortion.

The patient, a woman aged 27, had had several children and abortions, and was a stout, healthy woman till July, 1895, when she began to lose flesh and became sallow. Two months later she had a doubtful miscarriage at six weeks; on recovering from this she had a foul discharge. Brownish débris was repeatedly removed from the uterus, and the patient seemed to improve for a time, but then had a severe attack of pelvic inflammation. Soft growth was found presenting at the os uteri, which was dilated; the finger found a perforation of the uterus, and soft growth within its cavity. The patient shortly afterwards died.

The uterus was found 4½ inches long by 3 inches wide, and a triangular rent, whose sides were about 1½ inches, was seen in the fundus. The tissue of the uterus was found soft, spongy, and vascular, and on the front wall were two isolated masses of spongy vascular deposit the size of Spanish nuts. The uterus was fixed to the right wall of the pelvis by a mass of white fibrous tissue, in which were several abscesses and deposits of new growth, like that in the uterus. There was no deposit

visible to the naked eye in the abdominal glands. The uterus proved to be sarcomatous, and the nodules in the lungs similar.

The weak point in the description of the case seems to me to be the doubtful evidence of abortion.

Our 'Transactions' contain two beautiful chromo-lithographs illustrating the case.

A paper was read by Mr. Rutherford Morison on a case of Deciduoma Malignum occurring in England.

The patient had been quite well till her confinement, nine weeks previous, and made a good recovery, except that the lochia did not entirely cease. Six weeks after the confinement she began to bleed profusely, even to fainting and unconsciousness, and had two similar attacks during the next fortnight. The uterus was large, and full of soft friable growth, which returned after removal by the curette. The scrapings consisted of squamous-celled epithelioma. The uterus and ovaries were removed by vaginal hysterectomy, and the uterus was found to contain a growth the size of a Tangerine orange, infiltrating the walls, appearing outside as a nodule, and furnished with a broad pedicle. Four months later hæmoptysis came on, and signs of a tumour appeared in the left lung. The patient died seven months after the operation, and an autopsy was refused. There was no sign of recurrence in the abdomen or vagina.

Dr. Herbert Spencer read a case of Deciduoma Malignum, the first case, he believed, observed in this country; it occurred in 1889. The patient was aged 27. The first symptom occurred twenty-eight days after a normal labour, and consisted of the passage of masses of the growth. This was followed by a normal puerperium, and this again by repeated discharges of masses of growth and blood. The woman died with septic inflammation ten and a half weeks after delivery. An ulcerated and gangrenous growth was found at the placental site, the disease having nearly perforated the fundus. Secondary growth was found in the cervix and lungs, and nowhere

else. The growth in all three situations was similar, being like a large-celled sarcoma with typical "syncytium."

The paper was illustrated by lantern slides of photographs and micro-photographs.

Dr. Eden read a paper under the title "Deciduoma Malignum: a Criticism." He referred to the number of cases of malignant uterine growths occurring subsequent to gestation, which have been recently recorded, some twenty-eight in number, mostly by German observers. The most important cases were those of Sänger, Gottschalk, Marchand, and Whitridge Williams.

Several of the cases were ordinary forms of uterine cancer, the rest possessed the general characters of sarcomata, being rapidly growing tumours, with a marked tendency to hæmorrhage and necrosis, containing no well-formed vessels, tending to perforate neighbouring veins, forming metastases with great rapidity, by propagation along venous channels, and occurring at all ages from seventeen to fifty. In histological characters they differed widely. In thirteen cases out of the twenty-eight they succeeded hydatid mole. This seems to have suggested their origin from retained portions of altered villi; and in cases in which there was no hydatidiform degeneration, from normal villi. The author points out the facts that normal villi live as parasites on the maternal blood, that they invade the mucous and muscular tissues of the uterus, that they perforate venous channels, and have been known (as in a case of puerperal eclampsia recorded by Schmorl) to be carried as emboli to the lungs, thus possessing many of the characters of malignant growths. These points are still more marked in the villi of hydatid moles, which are known to grow after the death of the fœtus, while normal villi do not do so. It is therefore much less probable that malignant growths may arise from normal than from hydatidiform villi. Whether they do so in fact or not is the question, and the belief that the existing proofs of this are inadequate has prompted the author to his criticism.

He then analyses the case of Sänger, who is the author of the term "deciduoma malignum." This was the case of an imperfect abortion in a woman of twenty-three, at the eighth week, in consequence of an accident. The case ended in death from sarcoma, with pulmonary metastasis, seven months after the abortion. Sänger believed the growth to have originated in the decidua, because it contained numbers of cells like those of the decidua, and also plasmodia like the decidual "giant cells." No villi were found in it. Since then almost every malignant uterine growth discovered during the puerperium has been called in Germany a "deciduoma."

The criticism made by Dr. Eden is that a "decidual cell" has no characteristics by which it can be identified, being merely a modified connective-tissue corpuscle, such as is found in many connective-tissue tumours in various parts of the body. Even in the uterus they are not always confined to the decidua. They are not, therefore, characteristic of the decidua.

Gottschalk's case was that of a woman of forty-two, who is said on very slight evidence to have aborted at the sixth week. There was severe hæmorrhage, and the uterus was curetted repeatedly, masses of soft friable material resembling placental tissue being removed. Eventually the uterus was removed six months after the miscarriage, and the patient died with metastases in the lungs, spleen, and right kidney. Gottschalk's explanation was that the malignant growth sprang from the placental site from retained villi. Gottschalk regarded the case as one of sarcoma of the stroma only of the villi. But Dr. Eden considers this theory inadequate to explain the appearances, and points out that the evidences of pregnancy and the drawings of the author by no means support this view.

Mr. Whitridge Williams' scase was one of a negress who, having passed through a normal pregnancy and labour, developed in the second week of the puerperium a small painful nodule in the right labium majus, which grew rapidly

and sloughed. The patient died three months after confinement of septicæmia. There was a secondary growth in the vaginal wall, two in the uterus, and several in the left ovary, lungs, spleen, and kidneys. This was described as "deciduoma malignum;" but there is no evidence that the uterine growth was the primary one. On the contrary, the labial growth was more probably primary; and the evidence of the origin of the growths from placental tissue at all is very unsatisfactory.

Marchand has recorded two cases. The first was that of a girl aged seventeen with a bleeding tumour of the vaginal wall, which was scraped and reappeared, and the patient died within three weeks with a large abdominal tumour, the cause of death being pulmonary embolism. The abdominal tumour was distended and ruptured; the left Fallopian tube containing a mass of necrotic tissue like placental tissue. No chorionic villi or fœtus could be found, and yet the diagnosis of tubal gestation was confidently made, and the tubal growth was regarded as a mole which had undergone malignant transformation of a kind new to pathology. In this case the evidence of pregnancy is most unsatisfactory.

Marchand's second case was that of a woman who suffered from severe hæmorrhage in the third week of the puerperium after a normal pregnancy and labour. A large quantity of tissue and blood-clot was removed, but recurred. Vaginal hysterectomy was performed on account of perforation of the uterus by the wound in attempting to replace it. Six months later the patient was in good health.

The microscopical characters in Whitridge Williams's case and Marchand's two cases closely resembled each other; in none of them were any chorionic villi found.

Dr. Eden describes at length the genesis of the "syncytium," which is a term used in various senses, and the nature of which is still doubtful, and concludes by pointing out that the term "deciduoma malignum" has been

greatly changed from its original use, Sänger meaning by it a growth composed of decidual elements, while at present it is used for growths derived from structures partly fœtal and partly maternal. This latter theory is inadequately supported by facts, and requires proof beyond question that (1) the growth is connected with a previous gestation; (2) that it is developed from structures which may be definitely regarded as placental relics.

In an addendum Dr. Eden stated that an examination of a number of cases of secondary growth from a sarcoma of the testicle showed that the appearances supposed to be characteristic of "deciduoma malignum" may be found in rapidly growing sarcomata from other parts of the body, and concluded that the great majority of cases of so-called "deciduoma malignum" ought to be regarded as rapidly growing sarcomata.

The discussion was adjourned to the May meeting, when it was opened by Dr. Kanthack, and continued by Dr. Clarence Webster, Dr. Fothergill, Dr. Lewers, Mr. Bland Sutton, Mr. Doran, Dr. Spencer, and Dr. Eden. No discussion has been probably of greater scientific value of late years, and it reflected much credit on our Society.

Some of the speeches, notably that by Dr. Kanthack, were no less interesting than the papers on which they were founded, and the general conclusion seemed to be that "deciduoma" was an unsatisfactory term, and that it had yet to prove its title as a new disease, though the association of malignancy of a sarcomatous type with hydatid mole had still to be explained. The nature of the "syncytium" also required more investigation.

At the same meeting Dr. Lewers showed two uteri removed by vaginal hysterectomy for cancer of the cervix; Mr. Doran showed a cystic myoma of the uterus weighing over 15 lbs; Dr. Wise showed a placenta with infarcts; Mr. Malcolm four solid ovarian tumours; and

Dr. Horrocks a "simple maieutic" for the induction of miscarriage or premature labour.

At the June meeting Dr. Amand Routh showed a hydrosalpinx and small ovarian cyst removed by anterior colpotomy.

Mr. Doran read a paper on Cases of Fibroma of the Ovary and Ovarian Ligament removed by Operation; with a series of after-histories of cases reported in the 'Transactions' since 1879.

Two cases of fibroma of the ovary in the author's experience were first recorded, one typical and recently in hand, whilst in the second the tumour was removed in 1889, and though it seemed to present some of the microscopic characters of sarcoma, no recurrence had occurred. Eleven cases were tabulated, including the above. The rest were reported, when recent, in the Society's 'Transactions' since 1879, the author adding after-histories. This was done on account of the question of recurrence. In four at least malignancy was suspected, yet the after-histories proved innocence. Most of the eleven bore the naked-eye characters of a fibroma. The suspicious microscopic elements in four were apparently connective-tissue cells between bundles of white fibre. Myomata of the ovary were not considered. The disease was relatively frequent in youth, but might develop after the menopause. In ten out of the eleven cases the tumour was removed; all recovered, and in all the after-histories were favourable. In five out of the eleven cases there was free peritoneal fluid. A markedly hard and painless tumour, moving separately from the uterus, in a very young woman, was most probably an ovarian fibroma. Pedunculated subperitoneal uterine myoma was practically almost unknown in early womanhood; whilst dermoids, very common in youth, were seldom uniformly hard, and the hardest usually set up the most pain. Sarcoma of the ovary, relatively frequent in girlhood, was nearly always soft and associated with amenorrhœa and cachexia. In ovarian

fibroma, as in uterine myoma, the abdominal operation wound bled profusely.

Three authentic cases of fibroma of the ovarian ligament were tabulated. Two were certainly fibromata with cystic cavities; one was said to be sarcoma, but its extreme hardness and slow growth did not favour that idea. When large, the tumour might become œdematous and soft. Ascites and adhesions did not readily develop. Menstruation was regular. Diagnosis was hardly possible. The uterus might be enlarged, yet free from fibroids. There was no recurrence in two of the cases after operation. The third died on the fourth day after operation.

In the discussion, Dr. Cullingworth criticised the author's argument that non-recurrence proved innocence, and his statement that "in early womanhood pedunculated subperitoneal uterine myoma was practically unknown."

Dr. Spencer referred to a case in which he had diagnosed correctly a fibroid of the ovary, by the hardness of the growth, or by tracing its pedicle to the uterus at the spot where the ovarian ligament was attached, and stated that the youth of a patient formed no certain means of diagnosing an ovarian from a uterine fibroid.

In reply, the author asserted that if a class of tumours appeared histologically very malignant, yet proved clinically innocent, they must be reckoned as essentially innocent. He acknowledged that he was formerly too much of opinion that spindle cells and ascites were evidence of malignancy. He knew of no monograph on pedunculated or any other form of myoma of the uterus in women under twenty-five.

Dr. John Phillips read a paper on Anterior Colpotomy. The operation coincides in its initial stages with those of the operation of vaginal hysterectomy, followed by removal of any accessible disease, or of mere exploration. The author related four cases. In three the indication was pelvic adhesions, and in one the presence of a small ovarian

tumour. In all the operation was found to be easy, and the immediate results were satisfactory. The indications were thus enumerated :—Chronic ovaritis, with adhesions and accompanied by much pelvic pain ; early unruptured tubal gestation ; small ovarian and dermoid cysts ; adherent retroverted uterus, with subsequent performance of vaginal fixation ; small fibroids on the anterior or fundal surfaces ; small intra-ligamentous and parovarian cysts. The contra-indications were large ovarian or fibroid tumours ; old-standing pyosalpinx with adhesions ; extra-uterine gestation at or after rupture ; pelvic abscess pointing upwards on to the abdominal wall.

Mr. Morse, of Norwich, read a paper on a Case of Dermoid Ovarian Cyst impacted in the Pelvis, which was removed by abdominal section during the ninth month of pregnancy.

At the July meeting Dr. Remfry showed microscopical sections of a uterus showing chorionic villi and doubtful sarcoma, in consequence of which the uterus was extirpated. The sections were referred to a committee.

Dr. McCann read an elaborate paper on the Ætiology of Gonorrhœa, illustrated by lantern slides and photo-micrographs. The author pointed out that a true understanding could only be arrived at by studying the gonococcus as it occurred in the discharges, abscesses, and the like in the male suffering from gonorrhœa, in the female, and in the eyes of the newly born, together with cultivation and inoculation experiments.

He fully described the method of detecting the gonococcus, and its behaviour under various conditions ; the parts affected by the gonorrhœal poison in the two sexes ; and the diagnostic importance of the presence of the gonococcus.

Dr. Blacker and Mr. Lawrence read a very learned and interesting paper on a Case of True Unilateral Hermaphroditism with Ovotestis occurring in Man, with a summary and criticism of the recorded cases of true hermaphroditism. This was illustrated by excellent

drawings and diagrams, and clearly demonstrated by Dr. Blacker.

The authors adopt Kleb's definition of true hermaphroditism as the presence of different genital glands in one individual, as also his division into three classes: (1) Unilateral, in which there is an ovary or testis on one side, with ovary and testis on the opposite side; (2) Bilateral, with ovaries and testes on both sides; (3) Lateral, with ovary on one side, and testis on the opposite side. The specimen in question was one of true unilateral hermaphroditism from an eight-and-a-half months' fœtus, and consisted of a mal-developed uterus unicornis with right tube and ovary, while on the left the genital gland had the microscopical structure of both ovary and testis, connected with a mal-developed tube and an enlarged Wolffian duct representing epididymis and vas deferens. A summary was given of twenty-eight recorded cases, two of which were of unilateral, nine of bilateral, and seventeen of lateral hermaphroditism. Many of these were, however, rejected on analysis.

The authors believed the present specimen to be the only case of true unilateral hermaphroditism recorded in man. They believe that the occurrence of true hermaphroditism in man is proved, if structure and not function is taken as the test.

At the October meeting Dr. Tate showed a tubo-ovarian abscess, and Dr. Rivers Pollock a fœtus papyraceus.

Mr. Doran gave notes of an Unreported Case of Primary Cancer of the Fallopian Tubes in 1847, with notes on primary tubal cancer.

The specimen in question was recorded in a coloured drawing in an atlas recently presented to the Royal College of Surgeons by Dr. Renaud, of Manchester. The drawing is therefore one of great interest.

Dr. Lewers read a paper on a Case of Double Uterus with Double Hæmatometra and complete Absence of the Vagina. The author discussed the question of preliminary abdominal section in such cases, and is in favour of it. In the case

on record this was not done, the fluid being evacuated by a vulval incision, and the immediate result being favourable. The paper led to an interesting discussion, eliciting differences of opinion as to the advisability of abdominal section, of washing out the cavity, and of attempting to form a new vaginal passage where this is completely absent.

Mr. Doran referred to the difficulty of ascertaining the exact condition in certain apparent malformations, even with the aid of abdominal section.

At the November meeting Dr. William Duncan showed five specimens of uterine fibroids removed by the intra-peritoneal method.

Dr. Macnaughton Jones showed some self-retaining glass retractors for abdominal section.

Dr. T. G. Stevens read a paper on a Case of completely Cleft Spine associated with an Unusual Visceral Malformation in an Anencephalic Fœtus. The paper was elaborate and accurate, illustrated by several drawings, and adds another to a valuable series in our 'Transactions.' It is hardly capable of being summarised.

Dr. Eden read a paper on the Structure of the Ripe Placenta, and the changes which occur in Placentæ retained *in utero* after the death of the Fœtus, being an abstract of a communication then about to be made to the 'Journal of Pathology and Bacteriology.'

The author points to the withering of the ripe placenta as analogous to the withering of a leaf before it is cast off, and traces the changes which effect this. The changes begin with a kind of endarteritis of a certain number of branches of the umbilical arteries, particularly those of the marginal cotyledons and of the smaller arterial branches. No such change takes place in the capillaries and veins until the arteries are occluded, when the capillaries and veins become thrombosed. This process begins in the seventh month. Secondary to these are the changes in the villi, which begin with atrophy and degeneration of their epithelial covering, followed by clotting of the

blood in the maternal sinuses upon the surface of the villi thus changed. This deposit of fibrin obliterates the maternal space affected, and forms infarcts, which are so often described. The changes are thus most advanced on the side of the villi, and less advanced on the side of the maternal spaces. Another form of consolidation, in which the villi are crowded together without the formation of fibrin, depends probably on blocking of the maternal arteries of the cotyledon. Occlusion of the arteries in the villi is probably the process by which the villi not concerned in the formation of the placenta disappear, even as early as the second month; and thus the withering of the placenta is merely the extension to it of a process which has been active from quite early pregnancy.

The principal change in the maternal part of the placenta is degeneration of the superficial or compact layer of the decidua serotina.

With regard to the changes which occur in the retained placenta, the author points out that such changes may be due either to the causes which killed the ovum, or to the death of the villi. Practically two groups must be formed, one in which the fœtus has not long died, and is either not macerated or macerated but slightly, the other in which the fœtus is decidedly macerated. In the second group the primary changes are obscured. Villi in such placentæ are embalmed in the maternal blood which still circulates, and neither multiply nor decay for surprising lengths of time. This does not support the idea of the independent proliferation of villi in parts of the chorion retained (or supposed to be retained) in so-called "deciduoma malignum."

But although the placental villi behave thus, it is far otherwise with the extra-placental tissues. The membranes, the cord, and the fœtus necrose with some rapidity, because they are not thus bathed in circulating blood. When the circulation through the maternal spaces is stopped, the villi themselves begin to perish.

The arrest of the maternal circulation is effected by

the deposit of fibrin and clotting in the maternal spaces, as in the formation of infarcts, and this deposition of fibrin and clotting are probably here also secondary to arrest of the circulation in the villi, and the consequent changes in their surface. Cell-proliferation probably does not occur in fœtal tissues after the death of the fœtus. A retained placenta becomes in time like a large infarct from changes of the blood in the maternal spaces, started as above described. The process is well illustrated in twin placentæ when one fœtus has died. The author has never found any connective tissue formed in the coagulated blood round the villi, still less has he found any new vessels formed in the clot. On the contrary, the clot itself eventually disintegrates.

The changes in the villi are the same as those in the middle and inner zones of a large infarct in the living placenta.

As regards the decidua serotina, the author utters a caution as to the interpretation of changes in the retained placenta, considering that changes in the decidua appear to be a common (he thinks the commonest) cause of early abortions.

The compact layer of the serotina is fused with several rows of villi embedded in fibrin and blood-clot, the compact layer itself being greatly altered by fibrinous degeneration. The spongy layer is much less changed than the compact layer, and the plane of least resistance, through which the placenta is peeled off, does not pass through the spongy layer. Thus there is nothing in the process to impede the shedding of the placenta.

The membranes necrose rapidly, the process being most marked farthest from the placenta, the amnion more rapidly than the chorion and decidua.

The changes in the retained ovum following the death of the fœtus include—

1. Necrosis of the body of the fœtus, the cord, the amnion, and the chorion and decidua vera.

2. Gradual arrest of the maternal circulation through the placenta by thrombosis of the intervillous spaces.

3. Necrosis of the various divisions of the placental chorion as they become shut off from the maternal blood.

4. Fatty and calcareous degeneration of the necrosing tissues.

The paper was illustrated by many micro-photographs, and forms a valuable contribution to our knowledge of this obscure subject.

At the December Meeting Dr. Tate showed a tubo-ovarian abscess; Dr. Hubert Roberts read notes of a case of primary epithelioma of the vagina.

Dr. Dakin showed a cast from the uterus having all the characters of the decidual membrane found in connection with ectopic gestation, together with a small ovarian cyst from the same case, with microscopic sections of the same. This case is most instructive, and the simulation of a case of tubal pregnancy was, I think, complete.

Dr. Spencer read a paper on three cases of Porro's Operation, one indicated by the blocking of the pelvis by fibroids, one by sacral enchondroma, and one by cancer of the cervix. One of these died from pre-existing renal mischief, the other two recovered. The cases are fully related, and the question of removal or non-removal of the uterus discussed.

Obituary Notices.

Dr. Robert James Wilson, J.P., Hon. Local Secretary for St. Leonards, died on February 22nd, 1896, at Warner Square, St. Leonards, aged sixty-eight.

Dr. Thomas Charles Stewart Corry died at Belfast on May 20th, aged seventy. He had been in declining health for some years, and had been confined to the house for six months. He was the eldest son of Mr. T. C. S. Corry, D.L., of Rockcorry Castle, co. Monoghan, where he was born. He studied at the old Belfast Medical School,

and favoured each of the other kingdoms by acquiring the diplomas of M.R.C.S.Eng. in 1846, of M.D.Aberdeen in 1856, and L.R.C.P.Edin. in 1859. His whole professional life was spent in Belfast, where for a time he was Dispensary Medical Officer during the great cholera epidemic which visited that city some fifty years ago. He was a member of the Board of Guardians for some twenty-five years, and only retired in March, 1896. At the end of 1895 he was presented with a testimonial and an address on the occasion of the jubilee of his qualification as a medical practitioner. He was the author of 'A Guide to the Scenery and Antiquities of Ireland,' which passed through eight editions. He also wrote a book of 'Irish Lyrics,' and 'Poems, Sketches, &c.' He was a man of kindly, gentle manners, and was greatly beloved by the poor.

Professor Joseph Alexis Stoltz, of Nancy, died on May 20th, aged ninety-two. He was born at Andlau (Lower Rhine) on December 14th, 1803, being the son of an officer of health.

Dr. Stoltz was an industrious boy, and made such progress with his studies that a dispensation had to be obtained on account of his being under the proper age for his examination in Arts. As a student of Medicine his success was equally brilliant. He became the Assistant of Professor Flamant, having the charge of his extern clinique.

He wrote his inaugural thesis on 'Points Relating to the Art of Midwifery,' containing three subjects: (1) "on the different conditions of the cervix uteri, and especially on changes produced by pregnancy and delivery;" (2) "on the mechanism of parturition;" (3) "on the use of the lever." The portions of this thesis dealing with the changes in the cervix, and with the obliquity of the fœtal head, are well known, and have become classical; the former especially redirected attention to this most important subject, and formed the basis of our present improved (though yet far from perfect) knowledge. The latter also were highly important contributions to our

knowledge, which they helped considerably to advance. They are frequently referred to by the late Dr. Matthews Duncan in his 'Researches in Obstetrics, and Natural and Morbid Parturition.' Naegele's paper "Ueber den Mechanismus der Geburt" appeared first in Meckel's 'Archiv für Physiologie' in 1819, Stoltz's thesis appeared in 1826, and it is on record that Stoltz's work was highly valued by Naegele.

In 1835 Dr. (now Professor) Stoltz published his 'Observations on the Induction of Premature Labour.' The frequency with which the destruction of the fœtus was resorted to in England in the first half of the eighteenth century had been severely criticised on the Continent, which had, however, no effect.

In 1752 an anonymous pamphlet was published under the title of 'A Petition of Unborn Babes.' It was addressed to the Royal College of Physicians of London, and complained of the ill-treatment which they had had to endure in the wombs of their mothers at the hands of accoucheurs armed with pincers, hooks, and other barbarous instruments, from which, as subjects of the Queen, they claimed to be delivered. To this petition naturally no answer was sent, but in a congress in London in 1756, the most distinguished English obstetricians, having observed cases in which women with contracted pelves, who had never been able to bear a living child at term, had nevertheless borne living children prematurely, debated the case whether, from the point of view of ethics and practice, the artificial induction of premature labour was justifiable. This procedure was recommended by Denman, who subsequently practised what he approved. In Germany the proposal was received with coldness, and was rejected in France.

The prejudice against the practice rose very naturally from its close (though not essential) resemblance to criminal abortion, a very ancient crime. Even Baudelocque states that labour cannot be justifiably induced prematurely except in cases of severe hæmorrhage, which

would cost the woman her life unless the uterus were emptied; to empty the uterus under these circumstances is a duty, but to induce premature labour for contracted pelvis is a crime. Schweighäuser, of Strasburg, pointed out in 1817 the difference between forced delivery ("accouchement forcé"), and labour induced by exciting normal uterine action. In 1825 Schweighäuser published a work which he also translated into French, and in which he recorded successful cases. He recommends the induction of premature labour in cases in which a contracted pelvis has necessitated perforation, or in which the child has been lost after version through a contracted pelvis in the first, or first and second labours. He adds very wisely, that the operation of induction is one of patience rather than difficulty. He is not in this place speaking of mechanical difficulties arising during delivery. The proper time for the operation is towards the end of the thirty-first week.

Stoltz was so firmly convinced of the correctness of the suggestion of Denman and other English obstetricians thus confirmed by Schweighäuser that he indicated the subject of the induction of premature labour as a suitable theme for his pupil Gustave Burckhardt, on which to write his thesis. This thesis, published in 1830, is the first French work on the subject. Stoltz himself was the first in France to carry a case to a successful issue in 1831.

During this time French medical public opinion was against him.

In 1832 he communicated his case to the Academy of Medicine, and at the same time showed the pelvis of the patient in question, who had meanwhile died of consumption.

A committee of the Academy was appointed to report on the subject, but it never did so, perhaps on account of a resolution passed in 1827 condemning the practice. Public opinion, however, began to change, and P. Dubois, one of the committee, in the competition for the Chair of Obstetrics in Paris in 1834, replied to the question

"What is the proper treatment in different kinds of pelvic deformities?" by pronouncing in favour of the induction of premature labour.

At this time the grounds of opposition were still largely ethical, and the induction of premature labour was looked on as a kind of abortion. Velpeau, having condemned it in his first edition of his 'Tocologie théorétique et pratique,' had the courage and good sense to change his opinion frankly; and in his second edition of 1835 says, "The induction of premature labour, defended by Fodéré and by Stoltz in the dissertation of Burckhardt, will soon be universally adopted by us, as it has been for some years in England, Germany, and Italy."

Stoltz's work 'On the Induction of Premature Labour' was published in 1835. It includes researches on the size of the fœtal head, especially the bi-parietal diameter, at different months of gestation, and deductions as to the proper time to induce labour in pelves of different sizes.

The operation was gradually adopted in France, spreading from Strasburg as a centre to Paris and the rest of the country.

Stoltz had the faculty of inspiring work in his assistants, and many important works issued from his clinique.

His work in the wards lasted throughout the year, his lectures during the summer session. He divided the course into two parts, normal and abnormal, an arrangement which has many advantages. After the regular course he gave some demonstrations of obstetric operations on the dummy. In lecturing he was slow, precise, and serious, avoiding digression. At the bedside he had the same characters, dictating his notes to his house physician, and correcting them himself when written. As an operator he was careful, skilful, neat, and clean.

The works of the great writers on obstetrics were thoroughly familiar to him, and he was able to point readily to their principal achievements. He accumulated a considerable museum of normal and pathological preparations at Strasburg, which are still there.

In appearance he was tall, his face was grave and severe, but he was affable to his pupils, and ready to help them as far as his time permitted. To those who wished to do original work he was kind, and placed at their service his valuable library, and sometimes also his own observations.

The Franco-German war in 1870, ending in the annexation of Alsace and Lorraine, entailed the transference of the Academy of Strasburg to Nancy, as, with hardly an exception, all the officials declined to change their nationality.

Stoltz, probably on account of advancing age, found himself unable to accept the modern doctrines of puerperal fever, and incurred the wrath of Semmelweis.

He retired in 1879 to his native town of Andlau.

The characteristics of Professor Stoltz were his wide knowledge, accuracy, method, good judgment, and uprightness; he may have had some of the "defects of his qualities," and been somewhat too rigid in his views, at least in late years. But it must be remembered that in earlier times he changed medical public opinion in France on certain points in a direction of progress which has never been questioned, and that he was seventy-six when he retired. He died, as has been said, at the age of ninety-two, on May 20th, 1896, after a short illness.

He was one of our Honorary Fellows for some twenty years.

It is to be hoped that his works, which were mostly published in the 'Gazette Médicale de Strasbourg,' may be collected before long.

In the variety and scope of his work; in his depth, wide knowledge, accuracy, and method; in his clear and decided judgment, he greatly resembled, as it seems to me, another late Honorary Fellow—Dr. Matthews Duncan; who, however, unlike him, was taken away before his powers had been affected by old age.

Dr. Nathaniel Henry Kirkpatrick Kane, of Kingston Hill, died on October 22nd, aged forty-nine. His illness

began with influenza four years ago, followed by pneumonia, and he succumbed to a second attack of pneumonia and pericarditis of obscure septic origin. He graduated at Trinity College, Dublin, in 1873, having acted under Sir William MacCormac in the Franco-German war, for which he received the bronze cross. He was president of the Thames Valley Branch of the British Medical Association in 1893–4.

Mr. Frederick Blackwood Hallowes, of Redhill, died on November 14th, aged sixty-one. He was educated at King Edward VI's School at Canterbury, and began his medical studies at the Kent and Canterbury Hospital, of which his father was one of the surgeons, completing them at St. Bartholomew's Hospital. He joined Messrs. Martin and Holman, of Reigate, and eventually became their partner at Reigate. He was a diligent student of the best medical and lay literature of the day, and owed his success in practice not only to his professional knowledge and skill, but also to his kindness and devotion to his patients. He was greatly and successfully interested in the welfare of Redhill, which was, when he settled in it, a comparatively small suburb of Reigate. He was a valued member of the Council of Epsom College. In 1881 he was president of the South-Eastern Branch of the British Medical Association.

Dr. Gomer Davies died on August 18th, after an illness of eight months. He was born in September, 1845, at Rhyl, in North Wales, was educated at Charing Cross Hospital, and practised at Pembridge Villas, Bayswater. He was a careful and genial practitioner, and had a large number of patients. Illness compelled him to leave his practice in January, 1896.

Arthur Henry Williams, of St. Leonards-on-Sea, died on August 23rd of acute anæmia following influenza. He was born in 1862 at Burnby, in the East Riding of Yorkshire, of which parish his father was rector. He was educated at Pocklington Grammar School, from which in 1881 he received a Dowman Exhibition to St. John's

College, Cambridge. At his college he obtained a college prize and an exhibition of Sir Ralph Hare's foundation. He took honours in the Natural Science Tripos, and after passing the second M.B. examination, entered at Guy's Hospital, where he became House Surgeon, Resident Obstetric Assistant, and obtained the Gold Medal in Surgery and the Mackenzie-Bacon Prize in Nervous Diseases and Insanity. Having graduated M.A., M.B., and B.C. at Cambridge, he entered into partnership with Dr. E. Duke, of St. Leonard's. A thorough training for his profession and pleasant personal manners combined to make his professional prospects bright, but his health never rallied from an attack of influenza two years ago, and he died, as has been already said, of acute anæmia.

Dr. Edwin Child died on December 9th after a very few hours' acute illness. He was born at Vernham, near Andover, and belonged to an old and well-known Hampshire family. He was a student at the Charing Cross Hospital, and qualified in 1864, holding the office of House Surgeon to the hospital. He settled at New Malden in 1865, and had been more than thirty years in the same practice at the time of his death, filling several public offices in the district. He was greatly interested in politics (being a staunch Conservative) as well as in the ecclesiastical and educational institutions of the neighbourhood. He was strongly attached to his old medical school, and often returned to it on special occasions. He was regarded by his neighbours with respect and affection, and is, I am told, greatly regretted.

Professor Pajot was born in Paris in 1816, studied medicine in the Paris Faculty, and graduated in 1842. He wrote, with Paul Dubois, a treatise on midwifery, the first part of which appeared in 1860, and which was never finished. Besides this he was the author of many papers on various parts of obstetric medicine and surgery. He was the founder and director of the 'Annales de Gyné-

cologie,' and the founder and first president of the Société d'Obstétrique et de Gynécologie de Paris.

In 1842 he became "Professeur libre d'Obstétrique;" in 1853 he became "agrégé;" in 1862, after having been lecturer to midwives at the Clinique for ten years, and having acted as assistant to both Professor Moreau and Professor Paul Dubois, he was appointed regular Professor of Obstetrics and occupied this post for twenty years. In 1883 he became Professor de Clinique Obstétricale et de Gynécologie, from which chair he voluntarily retired in 1886. He was thus a teacher of his subject for nearly half a century.

As a practical obstetrician he was almost unrivalled in France. As a teacher he was prominent for interesting his class. His pupil, Professor Pinard, describes his method of lecturing, and very impressive it must have been. His language was fluent, his articulation clear, his voice sonorous and powerful, his gestures illustrative. He had the intuition whether his description had been understood or not. If understood, he continued; if not, a sign, such as the raising of a head, the arrest of the movement of a pencil in a note-book, were sufficient for Pajot. He brought his discourse round again to the point where the scent had failed, and by a word, or often by a gesture, the difficulty was made easy. His object was, as he said, to drive three or four nails into the heads of his hearers. These nails were driven by a simple formula or an appropriate and happy illustration, and, when driven, they stuck. Knowing that sustained attention is very fatiguing, he interspersed stories into his lectures, which helped his hearers to remember his points, while it relieved the tension of their minds. He had a habit of ending his lectures with a question which he promised to answer in his next, which he called "baiting his hook." He was an enthusiastic fisherman, and caught more than fish, for, being in the habit of spending the nights in a boat under the Pont Marie, a favourite place for suicides, he often had his fishing spoilt by candidates

for a watery grave. He is said to have rescued no less than sixteen of these, and to have gained the name of the "Newfoundland dog of the Faculty."

He was deeply versed in the classical writings of his profession, and was particularly impregnated with the clinical researches of Baudelocque, Madame La Chapelle, and his master, Paul Dubois. His demonstrations in the lecture-theatre were so graphic that his pupils found themselves well equipped for actual practice.

Personally, Professor Pajot was tall, handsome, and impressive. He dressed in black, with a white tie, was clean shaved, with hair somewhat long and thrown back, and carried his head well upon his broad shoulders.

He was aphoristic and epigrammatical; his epigrams, like burs, always stuck, and being quoted widely, sometimes made him enemies. This is believed to be the reason why he was never made a member of the Académie de Médecine. One of his stories in lecture, which I have not seen in print, had for its purpose to caution students against pulling on the arm in shoulder presentations. A doctor, he said, committed this error, the child was nevertheless born alive, but grew up with loss of power in the arm. The child eventually brought an action against the doctor for malpraxis, and obtained 4000 francs damages. "Never," said Pajot, "shake hands with a fœtus. 'Cette main, si petite, si faible, vous écrie d'une voix de tonnerre: Je vous demande quatre mille francs d'amende!'"

Pajot was a convert to antiseptics, and introduced them into his clinique.

He was one of our Honorary Fellows.

He died on July 25th, 1896, at Souppes (Seine et Marne). It is strange that the date and place of his death had to be learnt by special inquiry, and that no adequate obituary notice of so distinguished a man has appeared in any French publication.

Only one other task remains for me to perform, and that is to bid you all adieu.

I have to thank you for the support you have given me in the Chair during a term of office not without its difficulties. I think that the work done in the last two years is highly creditable to the Society. I rejoice to see signs of a fine undergrowth among the younger men, who, if they only fulfil their promise, will do excellent work, which shall increase the reputation, not only of the Society, but of themselves. I would only say that a Society like ours must depend for success in the best sense on two things—a high standard of work, and a high standard of ethics. Of these the latter is even more important than the former, and without it our Society cannot succeed in the best sense. I believe that this has been its most valuable quality in the past. I hope and believe that it has not suffered deterioration in this respect at my hands, and I trust that it will never do so at the hands of any of my successors.

In my immediate successor you have one who has been an enterprising and excellent Chairman of the Midwifery Board, who will, I am certain, throw all his energies into the work of the Presidential Chair, and whom we all heartily congratulate on the honour which is now conferred on him, falling as it does at a time when such an honour is doubly significant.

I have once more to thank you, gentlemen, and after sixteen years spent continuously in your service as an official of the Society, to wish you good-bye.

It was moved by Dr. Potter, seconded by Dr. Hurry, and carried by acclamation—"That the thanks of the Meeting be given to Dr. Champneys for his most interesting address, and that he be requested to allow it to be printed in the next volume of the 'Transactions'; and further most cordial thanks for the very efficient manner in which he has presided over the meetings of the Society during his term of office."

The President announced that the Officers and Council

shown on the printed list as recommended by the Council were duly elected.

President.—Charles James Cullingworth, M.D.

Vice-Presidents.—William Duncan, M.D.; John H. Galton, M.D.; Thomas Cargill Nesham, M.D. (Newcastle-on-Tyne); Jamieson Boyd Hurry, M.A., M.D. (Reading).

Treasurer.—John Baptiste Potter, M.D.

Chairman of the Board for the Examination of Midwives.—Percy Boulton, M.D.

Honorary Secretaries.—William Radford Dakin, M.D.; John Phillips, M.A., M.D.

Honorary Librarian.—Walter S. A. Griffith, M.D.

Other Members of Council.—Thomas Rutherford Adams, M.D. (Croydon); John Walters, M.B. (Reigate); Joseph Thompson (Nottingham); Albert Kisch; Arthur Nicholson, M.B. (Brighton); Richard Pinhorn (Dover); Thomas Watts Eden, M.D.; Amand Routh, M.D.; Frederick John McCann, M.B., C.M.; William Gandy; George Henry Pedlar; Montague Handfield Jones, M.D.; William Rivers Pollock, M.B., B.C.; Alfredo Antunes Kanthack, M.D.; Angus Fraser, M.D. (Aberdeen); Harold A. Des Vœux, M.D.; Charles Hubert Roberts, M.D.; Walter W. H. Tate, M.D.

It was moved by Dr. Playfair, seconded by Dr. Japp Sinclair, and carried—"That the thanks of the meeting be given to the retiring Vice-President, Dr. Horrocks, and to the other retiring members of Council, Dr. Boulton, Mr. Claremont, Mr. Turner, Dr. Holman, Mr. Malcolm, Dr. Remfry, Mr. Salter, and Mr. Tweed."

MARCH 3RD, 1897.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Present—49 Fellows and 21 visitors.

Books were presented by Dr. Galabin, Professor Pinard, Dr. Olshausen, and the Guy's Hospital Staff.

The following gentlemen were elected Fellows of the Society:—Joseph William Williams, L.R.C.P.Lond.; George Porter Mathew, M.B., B.C.Cantab.; William Murray Leslie, M.D.Edin.; Harold Jäger, M.B.Lond.; Arthur Francis Stabb, M.B., B.C.Cantab; Alfred Bienemann, M.B., C.M.Edin.

The President announced that the following letter of condolence on the death of Sir Thomas Spencer Wells, Bart., had been received from the "Gesellschaft für Geburtshülfe und Gynäkologie in Berlin."

"*An die* OBSTETRICAL SOCIETY IN LONDON.

"Die Gesellschaft für Geburtshülfe und Gynäkologie in Berlin hat mit wahrer Trauer die Nachricht von dem Tode Sir Thomas Spencer Wells vernommen.

"Wir verlieren mit ihm eines unserer ältesten Ehrenmitglieder und betrauern in seinem Hinscheiden den Verlust eines Mannes, welchem die moderne Gynäkologie in erster Linie ihre heutige glanzvolle Stellung verdankt. Die hohen Verdienste, welche er sich um die Ausbildung der abdominellen Chirurgie erworben hat, seine hochgeachtete und gleich beliebte Persönlichkeit werden dem Todten in dem Kreise unserer Mitglieder ein dauerndes Andenken sichern.

"Wir versichern die Obstetrical Society, welcher Sir Thomas Spencer Wells solange als Vorsitzender angehörte, der aufrichtigsten Gemeinsamkeit in der Trauer um den grossen Toten.

"Berlin, *den* 26 *Februar*, 1897."

"Der Vorstand der Gesellschaft für Geburtshülfe und Gynäkologie in Berlin.

Olshausen.	Gusserow.
A. Martin.	Paul Ruge.
Carl Ruge.	Odibrecht.
G. Winter.	N. Flaischlen.

FIBROIDS REMOVED BY THE INTRA-ABDOMINAL METHOD.

Shown by Dr. W. Duncan.

Dr. Duncan showed five specimens of fibroids removed by the intra-abdominal method.

DOUBLE PYOSALPINX.

Shown by Dr. W. Duncan.

Dr. Duncan showed a specimen of double pyosalpinx.

UTERUS WITH INTERSTITIAL FIBROID REMOVED FROM A PATIENT AGED TWENTY-SIX.

Shown by Mr. A. F. Stabb.

Mr. Stabb showed a uterus with an interstitial fibroid removed by abdominal hysterectomy by Dr. Cullingworth.

The interest of the case was the age of the patient, viz. twenty-six, and the facts that the size of the tumour (that of a small fœtal head), and œdematous changes having taken place in it, together with a history of menorrhagia for three years, proved the presence of a fibroid at the unusually early age of twenty-three at the latest.

The President said he had suggested to Mr. Stabb that he should show the specimen. Mr. Doran had made a remark in his paper on ovarian fibroma to the effect that uterine fibroids in young subjects (say under twenty-five) were practically unknown. He (Mr. Doran) was of opinion that this fact would assist the diagnosis in doubtful cases. In the discussion which followed the reading of Mr. Doran's paper, he (the President) had expressed the view that Mr. Doran had put it more strongly than the facts warranted, and that it would be more correct to say that fibroids in young subjects were very rare than that they were practically unknown. Mr. Doran, how-

ever, adhered to his phraseology. Such a point could only be settled by a collective investigation, and the specimen now shown, in which an œdematous fibroid causing excessive hæmorrhage was found in the uterine wall in a patient of twenty-six, was intended as a contribution to such an investigation.

Mr. ALBAN DORAN understood that a second case of fibroid disease of the uterus in a woman under thirty had been observed by Dr. Cullingworth. A monograph on a collected series of such cases is much to be desired.

INAUGURAL ADDRESS

ON THE

UNDIMINISHED MORTALITY FROM PUERPERAL FEVER IN ENGLAND AND WALES.

NOTWITHSTANDING the risk of repeating what every newly-elected President has said before when rising for the first time to address those to whom he owes his distinction, I cannot let such an opportunity pass without expressing my sense of the honour you have conferred upon me in calling me to occupy this responsible position. It is no mere empty form of words when I say that I enter on my duties with diffidence and a keen sense of the responsibilities I am undertaking. I sincerely trust that my term of office may be one of prosperity and peace, and I think there is every probability that it will be. But whether it should be my good fortune, whilst in command of the vessel, to have prosperous winds and a calm sea, or whether it be otherwise, you may rely on my doing my utmost to follow the best traditions of the Society, to uphold its dignity and interests, and to help it to fulfil the great objects for which it was founded and which it has hitherto so faithfully and successfully carried out.

I have sometimes thought that the Society suffers from a plethora of presidential addresses. It is the custom for every President to deliver three addresses during his

two years' tenure of office; viz. an inaugural address, a valedictory address, and a sort of interim report at the close of his first year of office. One consequence of this arrangement is that every second year it happens, as on this occasion, that the time of the Society is occupied at two successive meetings by an address from the chair. It is conceivable that such an arrangement might come to be a serious interruption to the ordinary business of the Society. At present the list of communications in the hands of the secretaries is not a long one, and the few words I purpose addressing to you are not likely to seriously block the way.

Perhaps the most usual conception of the function of an inaugural address is that it should embrace a survey of recent progress. My own notion is that it should be regarded as an opportunity to give utterance to thoughts bearing on the Society's objects and work that have been occupying the speaker's own mind, and that are of too general a nature to form the subject of an ordinary communication. Retrospects of the kind just alluded to undoubtedly have their uses; but besides their tendency to become monotonous, they have, to my mind, this additional drawback—that they concentrate our attention too exclusively upon the bright side of the picture and miss the lessons to be learnt from our disappointments and failures. Presidents of scientific societies are not singular in this habit of recording successes and ignoring or passing lightly over the failures. It is the tendency of human nature in general; and presidents of scientific societies, notwithstanding all the dicta of Miss Cobbe and her coterie to the contrary, are very human.

I cannot help thinking, however, that it must be a good thing to have our attention called, at least once now and then, to the darker and more disheartening aspect of affairs; to be brought face to face with the actual facts of the situation, so that, recognising our errors, we may endeavour to repair them, and having our weak places pointed out we may set to work to

strengthen them, and that we may be stimulated to gird ourselves with new and more serviceable weapons for the struggle in which we are severally engaged. In our own profession it has passed almost into a proverb that there is often more to be learnt from a record of failure than from a story of success. It is from a strong conviction of the truth of this that I have decided to utilise this occasion for the purpose of drawing the attention of the profession to the death-rate from puerperal fever in this country, and to the humiliating fact that notwithstanding the introduction of antiseptics, the almost complete banishment of the disease from our lying-in hospitals, and the general advance in our obstetrical knowledge, the death-rate has not only not diminished, but, in some districts, has actually increased during the past few years. Attention has already been called to this fact by others, especially by Dr. Boxall* and by Dr. Williams of Cardiff,† to whose valuable papers I am indebted for much of the information I am about to bring before you. But there seems good reason to think that the profession has not as yet realised the enormous importance and significance of the facts to which these writers have invited attention, and has not by any means laid to heart the lessons to be learnt from them or the urgent necessity that exists for a radical alteration in our present midwifery practice. It appears to me that, at the present moment, there is no obstetrical or gynæcological subject that can compare in importance with this question of the undiminished death-rate from puerperal fever.

Three or four years ago, Dr. Boxall was appealed to by a physician to one of the insurance companies for facts bearing on the alleged diminution in the mortality of childbirth. The directors of the company were considering how far they would be justified in relaxing the rule by which 1 per cent. had hitherto been added to

* Boxall (R.), "The Mortality of Childbirth," 'Lancet,' July 1st, 1893.

† Williams (W.), "Puerperal Mortality," 'Trans. Epidemiological Soc. of London,' N.S., vol. xv, 1895-6, Lond.

the insurance premium in the case of women expecting their first confinement. The result of the inquiry instituted by Dr. Boxall, in response to this appeal, proved startling even to himself. It was well known that the mortality from puerperal fever had during the past few years diminished almost to the vanishing point in the lying-in hospitals, and the knowledge of this fact had led to the impression that the general mortality from puerperal fever had diminished. Indeed, it had so far come to be taken for granted, that speakers and writers on the subject repeatedly referred to this alleged diminution as a matter of common knowledge and as an occasion for legitimate jubilation. When the returns of the Registrar-General came to be examined, however, it was found that this rejoicing had been premature. The figures showed that, so far from having diminished, the death-rate from puerperal fever in England and Wales had considerably increased.

The mortality returns of the Registrar-General are arranged under two headings, viz. (1) puerperal fever or metria, and (2) accidents of childbirth. The latter includes cases fatal from hæmorrhage, eclampsia, puerperal mania, pulmonary embolism, &c. Deaths occurring during childbed from pre-existing disease or from causes not directly connected with childbirth, though taking place during labour or during the lying-in period, are left out of account. The returns under the two headings mentioned therefore comprise all the deaths known to have occurred *from* childbirth, though not all that occurred *in* childbirth. I am not concerned on this occasion with the mortality from the accidents of childbirth, though I may have to allude to them incidentally. My purpose is to call attention to the deaths from puerperal fever.

In the accompanying table is shown in detail the actual number of deaths returned annually under that head from the years 1847 to 1895 inclusive, together with the death-rate estimated in relation to the number of registered births—that is, to the number of children born alive.

TABLE I.—*Showing the Mortality from Puerperal Fever in England and Wales*, 1847–95.

Year.	No. of deaths.	Per 1000 births.	Year.	No. of deaths.	Per 1000 births.
1847	784	1·5	1872	1400	1·7
1848	1365	2·4	1873	1740	2·1
1849	1165	2·0	1874	3108	3·6
1850	1113	1·9	1875	2504	2·9
1851	1009	1·6	1876	1746	2·0
1852	972	1·6	1877	1444	1·6
1853	795	1·3	1878	1415	1·6
1854	954	1·7	1879	1464	1·7
1855	1079	1·7	1880	1659	1·9
1856	1067	1·6	1881	2287	2·6
1857	836	1·3	1882	2564	2·9
1858	1068	1·6	1883	2616	2·9
1859	1238	1·8	1884	2468	2·7
1860	987	1·4	1885	2420	2·7
1861	886	1·3	1886	2078	2·3
1862	940	1·3	1887	2450	2·8
1863	1155	1·6	1888	2386	2·7
1864	1484	2·0	1889	1852	2·1
1865	1333	1·8	1890	1956	2·2
1866	1197	1·5	1891	1973	2·2
1867	1066	1·4	1892	2356	2·6
1868	1196	1·5	1893	3023	3·3
1869	1181	1·5	1894	2167	2·4
1870	1492	1·9	1895	1849	2·0
1871	1464	1·8			

It will be seen that in 1881 there was a rise both in the actual number of deaths and in the percentage. It is quite true that the figures of that year had been exceeded on two occasions previously, viz. in 1874 and 1875. But after those two years the figures fell again, whereas since 1881 the increase has been maintained. It is this which gives significance to the rise in 1881. It should, however, be mentioned that in that year, with a view to making the returns more complete, the Registrar-General, in certain cases in which the certificates of death were not satisfactorily filled up, wrote to the medical men who had

signed them for further particulars. Thus, a letter was sent in every case in which a woman of child-bearing age was stated to have died of either peritonitis, septicæmia, or pyæmia. As a result of these special inquiries (which have been continued to the present time), numerous deaths have been added under the heading of puerperal fever. I am perfectly willing to make full allowance for this, and to concede that the sustained increase in the mortality from puerperal fever during the last fifteen years is to be partly accounted for in this way. But when all this has been granted, we are still face to face with the fact that the mortality has not appreciably diminished during the past fifteen years, and that the year 1893 was conspicuous for a puerperal fever mortality only once exceeded since 1847, the year in which the Registrar-General first issued a separate return. It is not pretended that the Registrar-General's returns give the figures with absolute correctness. No system that depends upon the accuracy of statement of a large number of people ever *can* be perfect. Besides which, as I have elsewhere pointed out, there is a natural tendency on the part of medical men, partly on personal and partly on public grounds, to avoid attributing deaths directly to the effect of childbirth. If, however, the figures err, they err in the direction of being *below* the truth, not *in excess* of it. Moreover, the sources of fallacy are not limited to a single year; they are the same throughout a long series. Hence they do not affect the comparison of one year with another, which is what I am now chiefly concerned with. Indeed, there can be no doubt that, if we could obtain perfectly correct returns, they would bring out even still more strongly the point to which I am directing attention, for while the number of deaths and the percentage would both be higher, the comparability of the figures of any one year with those of other years would remain unaffected.

Before proceeding to inquire into the *causes* of the persistently high mortality from puerperal fever, it may be well to ask your attention for a few minutes to its geo-

graphical distribution. In London the total death-rate from childbirth has considerably diminished. The diminution is due, however, not to any appreciable lowering of the mortality from puerperal fever, but to a lessened mortality from the accidents of childbirth. In the provinces, on the other hand, the total death-rate from childbirth remains practically unaltered; but whilst, as in the case of London, there has been a diminution in the mortality from the accidents of childbirth, the mortality from puerperal fever has increased to such an extent that instead of being accountable for less than a third of the total mortality, it is now accountable for more than one half.

In a paper read before the Epidemiological Society in March of last year (1896), Dr. Williams, the Medical Officer of Health for the County of Glamorgan, showed that, of the various districts and counties of England and Wales, those with the heaviest death-rate from puerperal fever, between the years 1848 and 1894, were Lancashire (2·4), which heads the list, North and South Wales, Northumberland, and Cheshire (2·2). Close behind them came Cumberland, Durham, the West Riding of Yorkshire, Derby, and London (2·1). Surrey had the lowest mortality, and very near to it came Cornwall, Sussex, Hants, Dorset, and Rutland (all under 1·4).

Taking the shorter and more recent period embraced between the years 1885 and 1894, Lancashire, Cheshire, and North and South Wales still maintain their unenviable pre-eminence in the black list; Northumberland disappears from it; and Derbyshire and the West Riding of Yorkshire take its place.

Dr. Williams points out that as a general rule the rate is "highest in the western counties, especially in the hilly Welsh division, or, roughly, in those counties and parts of counties west of a straight line drawn from the mouth of the Severn to that of the Tees."

It would be impossible in the limited time at my disposal this evening to enter into a detailed inquiry into the conditions of life and other circumstances which might

serve to explain the relative mortality from puerperal fever in all these various districts. It must suffice if I select one district, namely, that of Wales. I make this selection because, in the paper already alluded to, Dr. Williams has furnished ready to our hands very ample materials for forming an estimate of the determining causes of the high death-rate from puerperal fever in that part of the country. After giving a table of the death-rate for each Welsh county for a period of ten years, Dr. Williams observes that density of population does not seem to be "a factor of much importance in determining puerperal mortality; on the contrary, both the mortality from puerperal fever and accidents of childbirth display a marked tendency to prevail in those counties where the only features in common between them is that they are mountainous, hilly, and sparsely populated, and that consequently locomotion is tedious, and medical assistance difficult to obtain in time. On the other hand, the mortality seems to be generally lowest in the flatter counties." He then proceeds to speak more particularly of the registration county of Glamorgan, of which as the medical officer of health he has an intimate knowledge.

The county of Glamorgan "has an estimated population of some 800,000, over half the population of Wales. It covers 516,966 statute acres, and includes the two county boroughs of Cardiff and Swansea." The county is divided into eight registration districts, and it is instructive to follow Dr. Williams in his summary of the relative mortality from childbirth in each of these, and the conditions of life that prevail in them. In the Cardiff registration district the puerperal mortality exactly corresponds with the mean for England and Wales (2·0 per 1000 births). "Its sanitary condition is satisfactory, and confinements are attended generally by the medical men and trained midwives." In the Pontypridd district the puerperal mortality is excessive (4·1). Its sanitary condition is generally unsatisfactory, and most of the confinements are "attended by untrained midwives." In the Merthyr Tydvil district

the death-rate from puerperal fever is higher than in any other district in Wales, viz. 4·7 per 1000 births. The greater number of confinements are attended by midwives, of whom only a few, if any, are trained. As to its sanitary condition, although that of Merthyr itself is highly unsatisfactory, that of the other parts of the district is fair.

In the next district on the list, that of Bridgend, the mean annual mortality from puerperal fever for the past ten years closely approaches that of the Merthyr Tydvil district, being 4·5 per 1000 births. This district includes one small town, a small seaside resort, four mining valleys, "and an extensive rural district with an agricultural and mining population." In the mining valleys the greater number of colliers' wives are attended by unskilled and ignorant midwives, none of whom are trained or registered. The sanitary condition of the district is in some localities exceedingly unsatisfactory.

In the Neath registration district there are five towns with a population varying from 4000 to 12,000, "together with an extensive area studded with mining villages and farm-houses. In the mining valleys many confinements are attended by midwives, but in the towns only a few comparatively. The sanitary condition is fair." The death-rate from puerperal fever in this district is very variable. The mean annual rate for the ten years ending 1894 was 2·8 per 1000 births, that is, higher than that of the Cardiff district, but much below that of the other three districts already mentioned.

In the Pontardawe registration district, containing three mining and tin-plate towns, skilled medical assistance can be procured at short notice. The puerperal fever mortality is low (1·6).

The Swansea registration district, besides the town of Swansea, includes a scattered mining population. The sanitary condition is unsatisfactory, and midwives are employed to a considerable extent. The death-rate from puerperal fever is fairly high (3·0).

In the Gower registration district, which is largely

agricultural, the sanitary condition is fair, but the rate of mortality from puerperal fever is high (3·8).

Dr. Williams points out that as regards the towns, the puerperal fever mortality is much the same as in similar towns elsewhere. In the densely-populated mining valleys, on the other hand, the mortality is exceedingly high. He attributes this in a great measure to the systematic employment of unskilled and ignorant midwives. "From my experience in Glamorgan," he says, "I can prove, without a doubt, that they often spread puerperal fever broadcast and are often not interfered with." "The conditions of life," he continues, "consequent upon the physical features of the country, especially in North Wales, often make it impossible to obtain skilled assistance in time, and if any [assistance] is to be obtained it must be from untrained midwives." Even these are not always available, for, in such districts, friends and neighbours are often compelled to give the help that is needed.

I have considered the case of Wales at some length, because the information at our command is so definite. No one, I think, after hearing the above facts, can have any doubt as to the causes which mainly determine the excessive death-rate from puerperal fever in that country.

I have not time, as I said before, to inquire at any length into the conditions of life amongst the working classes in all the districts in which the mortality from puerperal fever is excessive, but I cannot refrain from saying a word or two about Lancashire, with regard to which we have some very important evidence. In the year 1892, Dr. T. E. Hayward, the Medical Officer of Health for the district of Haydock in Lancashire, appeared before the Select Committee on Midwives' Registration. The following is an abbreviated extract from the minutes of his evidence:—"Haydock is a coal-mining district. The population is 6535; there were 272 births registered last year; the average number for the past few years is 250; . . . I am in a position to

state that scarcely a fifth part of those confinements are attended, at any stage, by a doctor. The work is done by women who practise as midwives," but who "are, with few exceptions, untrained, and in very many cases grossly ignorant and incompetent." "The same condidition of things holds good more or less in the whole of that part of Lancashire." In support of that statement he quoted the report of the Medical Officer of Health for the county borough of St. Helens, with a population of over 70,000, in which it was stated that the great majority of confinements in St. Helens "are attended by midwives, a large number of whom have no other qualification than that of being mothers themselves."

It will thus be seen that, at least in one important particular, the conditions under which the death-rate from puerperal fever is excessive in Lancashire are similar to those which prevail in Wales. It must not, however, be supposed that I am going to lay the entire blame for the present deplorable loss of life from puerperal fever upon the midwives. The evidence is incontestable that they are responsible for much of it, but on this head I have probably for the present said enough. I desire now to bring the inquiry nearer home.

By the kindness of Mr. Shirley Murphy, the Medical Officer of Health for the administrative county of London, I have been supplied with a statement of the number of cases of puerperal fever notified in the various parishes within the London sanitary district during the five years 1891–5, and also with a statement of the number of births in each parish during the same period. From these two statements I have been enabled to draw up a list showing the number of notified cases of puerperal fever to every thousand births in each of the forty-one parishes. In other words, I have constructed a table of the relative incidence of puerperal fever in the London sanitary district during 1891–5. The result, which is somewhat unexpected, has been embodied in a chart of the district, prepared for me by Mr. R. E. Holding (Chart I). In

this chart, the parishes where puerperal fever is most prevalent are shaded black ; those in which the prevalence is a little below the highest, but still greater than in London taken as a whole, are marked by cross lines ; those in which the rate is less than that for the whole of London are marked by horizontal lines ; while those in which the proportion of cases to the number of births is comparatively small are left white.

Hampstead heads the list, for, although the actual number of cases is smaller than in many other parishes, the proportion of cases to the number of confinements (as estimated by the number of births) is the highest in London. As regards the actual number of cases, Islington had by far the largest, viz. 169 ; next to it, though at a considerable distance, came St. Pancras with 88, Lambeth with 86, and Battersea with 84.

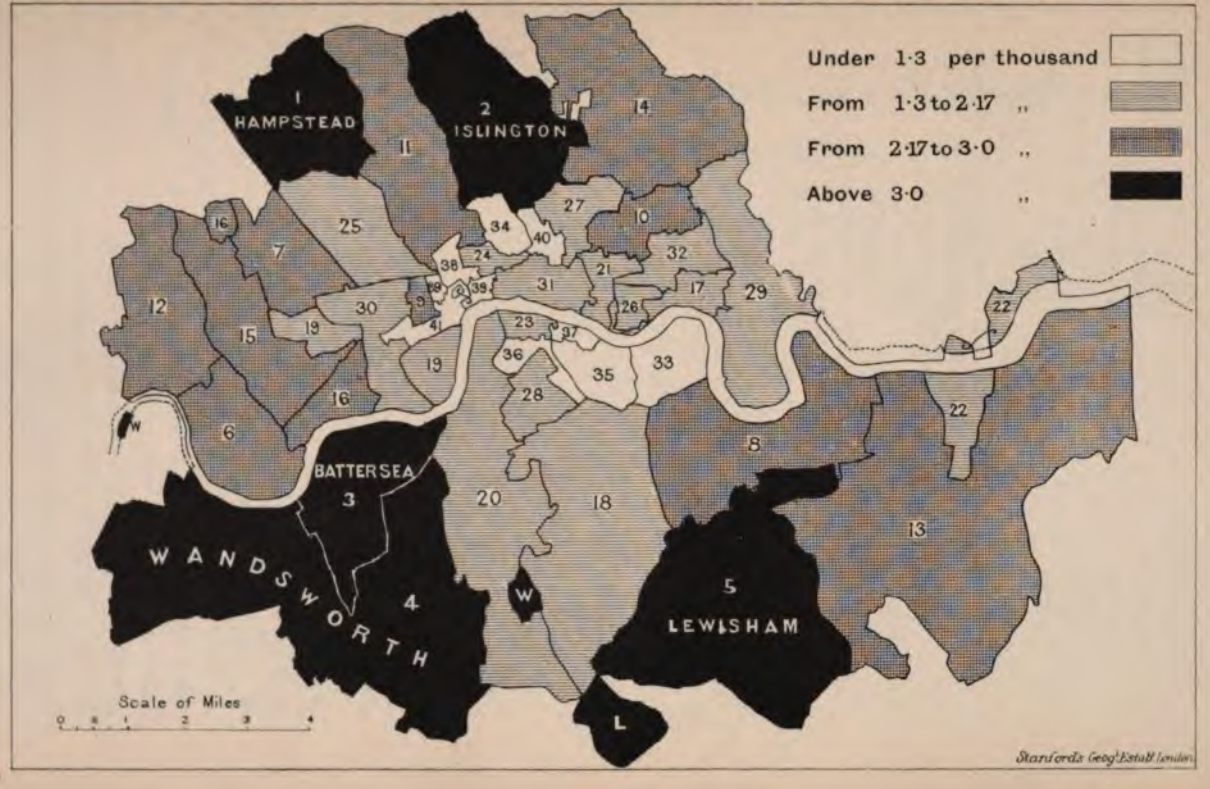
TABLE II.—*Showing the Relative Incidence of Cases of Puerperal Fever in the Respective Parishes of the London Sanitary District,* 1891–5.

Rate for the whole Sanitary District of London = 2·17.

No. on the chart.		Parish.	No. of notified cases per 1000 births.
1	...	Hampstead	3·64
2	...	Islington	3·48
3	...	Battersea	3·25
4	...	Wandsworth	3·12
5	...	Lewisham	3·02
6	...	Fulham	2·86
7	...	Paddington	2·85
8	...	Greenwich	2·77
9	...	St. James	2·71
10	...	Bethnal Green	2·49
11	...	St. Pancras	2·48
12	...	Hammersmith	2·46
13	...	Lee and Plumstead	2·41
14	...	Stoke Newington and Hackney	2·29
15	...	Kensington	2·26
16	...	Chelsea	2·23
17	...	Limehouse	2·14

Chart I.

RELATIVE INCIDENCE OF CASES OF PUERPERAL FEVER IN LONDON PARISHES. 1891—5.



No. on the chart.	Parish.	No. of notified cases per 1000 births.
18 ...	Camberwell	2·09
19 ...	Westminster . . .	2·06
20 ...	Lambeth	1·86
21 ...	Whitechapel . . .	1·86
22 ...	Woolwich	1·85
23 ...	St. Saviour, Southwark . .	1·71
24 ...	Holborn	1·62
25 ...	Marylebone	1·59
26 ...	St. George-in-the-East . .	1·55
27 ...	Shoreditch	1·47
28 ...	Newington	1·47
29 ...	Poplar	1·47
30 ...	St. George, Hanover Square .	1·31
31 ...	City of London . . .	1·31
32 ...	Mile End Old Town . . .	1·31
33 ...	Rotherhithe . . .	1·31
34 ...	Clerkenwell . . .	1·30
35 ...	Bermondsey . . .	1·07
36 ...	St. George, Southwark . .	1·02
37 ...	St. Olave	0·93
38 ...	St. Giles	0·89
39 ...	Strand	0·67
40 ...	St. Luke	0·53
41 ...	St. Martin-in-the-Fields . .	0·00

The parishes that figure in the black list, then, are Hampstead, Islington, Battersea, Wandsworth, and Lewisham. All these show a rate of over three cases per 1000 births. After them come, in the order named, Fulham, Paddington, Greenwich, St. James, Bethnal Green, St. Pancras, Hammersmith, Lee and Plumstead, Stoke Newington and Hackney, Kensington and Chelsea. The rate in all these is higher than that for London generally. It will be observed that Westminster, Lambeth, Whitechapel, St. George in the East, and Shoreditch, which might have been expected to appear high up in the list, show a much smaller proportion of cases than Hampstead and Islington, and even St. James, Kensington, and Chelsea. In St. Martin-in-the-Fields not a single case was notified, while Bermondsey, St. George (Southwark), St. Olave, St. Giles, Strand, and St. Luke, all show a remarkably small per-

centage. A comparison between this chart and Chart II, on which the parishes are shaded according to the number of persons to each acre, clearly shows that the prevalence of puerperal fever is not proportionate to the density of population.*

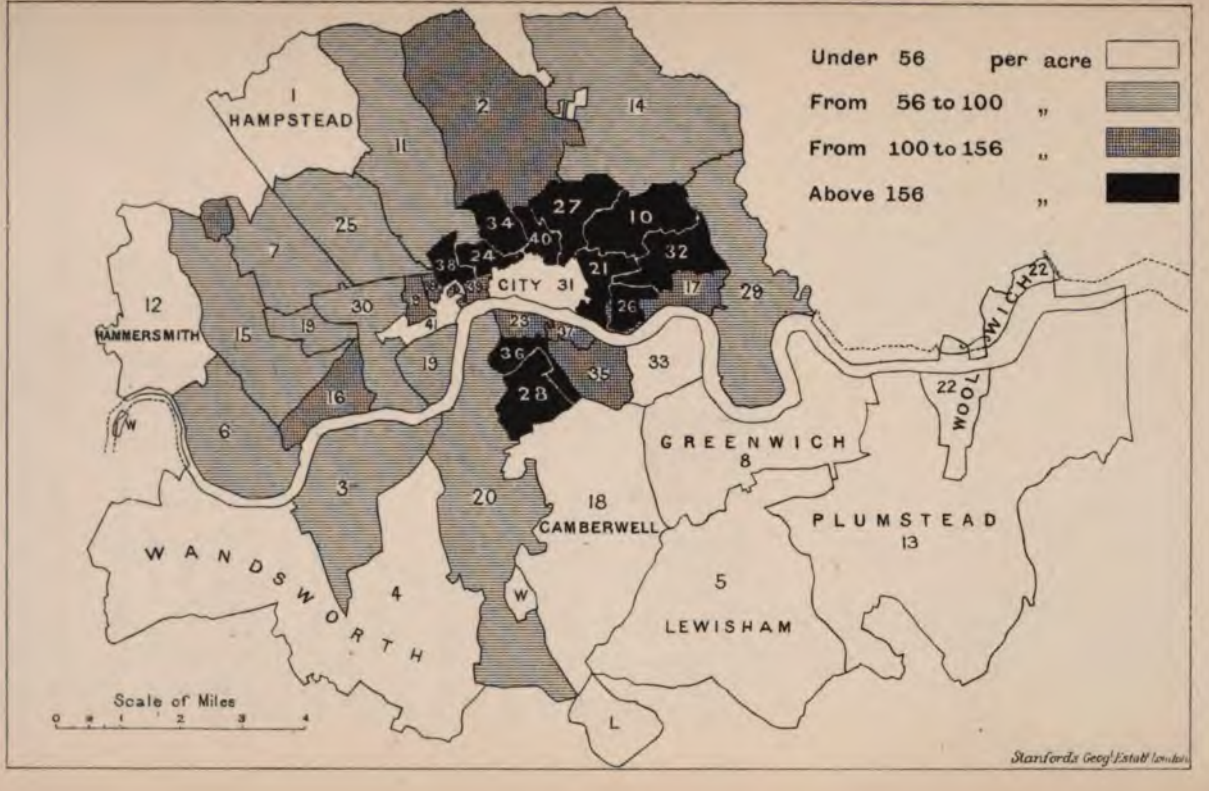
TABLE III.—*Showing the Density of Population per Acre in the Parishes of London* (1892).

No. on the chart.	Parish.	No. of persons to each acre.
36	St. George, Southwark	211
21	Whitechapel	197
27	Shoreditch	191
26	St. George-in-the-East	187
28	Newington	185
40	St. Luke	177
34	Clerkenwell	173
10	Bethnal Green	171
24	Holborn	170
38	St. Giles	160
32	Mile End Old Town	159
9	St. James	150
39	Strand	144
35	Bermondsey	135
23	St. Saviour, Southwark	132
17	Limehouse	123
16	Chelsea	123
2	Islington	104
37	St. Olave	103
7	Paddington	95
25	Marylebone	95
11	St. Pancras	88
15	Kensington	76
29	Poplar	72
20	Lambeth	71
3	Battersea	71
30	St. George, Hanover Square	69
19	Westminster	67

* For detailed statistics of density of population, &c., in London, see "Annual Report of the Medical Officer of Health of the Administrative County of London to the London County Council, 1892," p. 3. In 'London Statistics, 1893–94.' Sold by Stanford, Cockspur Street.

Chart II.

DENSITY OF POPULATION PER ACRE IN LONDON PARISHES, 1892.



No. on the chart.		Parish.	No. of persons to each acre.
14	...	Hackney	60
6	...	Fulham	58
31	...	City of London . . .	55
18	...	Camberwell	54
33	...	Rotherhithe	53
41	...	St. Martin-in-the-Fields . .	50
8	...	Greenwich	49
12	...	Hammersmith . . .	44
22	...	Woolwich	37
1	...	Hampstead	32
4	...	Wandsworth	18
5	...	Lewisham	15
13	...	Plumstead	9

The number of deaths recorded for the whole of London in the returns of the Registrar-General (1305) so nearly approximates the number of notified cases, that it seems safe to infer that the cases notified were for the most part fatal, and that the result of the inquiry would not have been materially different if it had been based on the number of deaths in each parish (which was unfortunately unobtainable) instead of on the number of notified cases.

It is no part of my present purpose to inquire into the special conditions of the various parishes with a view to determining the causes of the greater prevalence of puerperal fever in one parish than in another. Such an inquiry would possess great interest and great value, but it would lead me too far afield this evening. I have alluded specially to the mortality in London, in order to show that puerperal fever still claims its victims, not only in thinly-peopled country districts, but also in places densely populated, where, whatever the causes may be, the difficulty of obtaining medical assistance cannot be one of them.

Although puerperal fever has practically become a thing of the past in our lying-in hospitals—witness the remarkable record of the General Lying-in Hospital, and the equally remarkable results that Dr. Godson was able

the other day to point to as having followed the introduction of antiseptics at the City of London Lying-in Hospital*—it is impossible to ignore the fact that there has not been a corresponding diminution of mortality from puerperal fever in ordinary private practice. It was not to be expected that those who had already been engaged for some time in practice would at once assimilate the new ideas and adopt what appeared to many of them not only new, but revolutionary and unnecessary methods. But as time wore on, and a younger race of men came upon the scene, it was not unnaturally hoped that an improvement would take place; that a mortality which had been conclusively shown to be preventible would show some signs of diminution. How is it that this hope has not been realised? Either the profession is not convinced of the possibility of stamping out puerperal fever by the methods that have been proposed, or it has failed to carry out those methods with the thoroughness that can alone ensure success. As a responsible teacher of midwifery, I have often asked myself the question how far the teaching is at fault. Do we teachers sufficiently impress upon the minds of our students the infinite importance of this subject? Are we ourselves careful to show by our own example the importance of the precautions that we lay down in the lecture-theatre? Are we careful never to convey, by thoughtless word or careless act, the impression that the rigid adoption of antiseptic measures is excellent in theory, but does not after all matter so very much in practice? If we are not, is it to be wondered at that, when our students go out into the world and are released from the discipline of the school and hospital, they should forget how much depends on attention to minute detail, and should discharge their consciences in this matter of antiseptics by pouring a few drops of carbolic acid or a drachm of tincture of iodine

* Godson (C.), "Valedictory Address on Antiseptic Midwifery," delivered before the British Gynæcological Society, Jan. 14th, 1897, 'Lancet,' Jan. 23rd, 1897.

into the water in which they wash their hands, or even by simply bidding the nurse administer a similarly prepared solution as a douche? I am not painting an imaginary picture. The methods at present employed by many who, if questioned, would be quite ready to proclaim their belief in antiseptics, and who glibly assure one they have used "every antiseptic precaution," are often so crude and imperfect as to be a ludicrous travesty of genuine antiseptic midwifery.

The questions I have just been asking, I ask of myself as well as others. It is clear that something is wrong. We shall be most likely to find out what that something is by a process of self-examination, both on the part of teacher and taught, however disagreeable that process may be. A great deal has been written on the superiority of asepsis as compared with antisepsis, and it has become the fashion in some quarters to speak of antiseptics as though they had had their day, and to maintain that a condition of asepsis can be attained by cleanliness alone. It is well, however, to bear in mind that the triumphs of our lying-in hospitals have all been won by the scrupulous use of antiseptics; and that sterilisation, which is the essential element in aseptic surgery, is impossible in midwifery practice. When we have thoroughly washed our hands, as we all now recognise the necessity of doing, before making an examination in the lying-in room, it costs very little trouble to adopt the additional safeguard of immersing them for a few moments in an efficient antiseptic solution. And as a matter of experience those who are most diligent in the use of antiseptics are also the most diligent in carrying out all the details of elementary cleanliness. I firmly believe that if the simple antiseptic precautions with which everyone is familiar were conscientiously adopted, puerperal fever would be as rare in private practice as it is now in the best lying-in hospitals. "The only way," as I have elsewhere observed, "to avoid (the present) terrible mortality and to avoid also the terrible amount of puerperal disease, which, because it is

not fatal, is apt to remain unrecorded, is for every practitioner in midwifery to recognise his personal responsibility in the matter."

In an excellent little book of advice to mothers, the writer, herself a woman, after doing me the honour to quote the foregoing passage, makes the following significant comment. "Now I maintain," she says, "that *women themselves* have a *personal* responsibility in this matter also. They should not be content passively to allow their lives to lie in the hands of others who may, or may not, choose to use antiseptics. Women who are expecting their confinements should satisfy themselves beforehand that the doctor and the nurse engaged to attend will conscientiously use these safeguards."* This is plain speaking, but who will be disposed to find fault with it?

It will be gathered from what I have said that, in my opinion, the high death-rate from puerperal fever in this country is attributable mainly to the large number of confinements attended by ignorant and untrained midwives, and to laxity and half-heartedness in the use of antiseptic precautions in private practice. The remedy for the first of these evils is to insist that women who call themselves midwives shall possess at least such an elementary knowledge of the subject as shall enable them to know how to prevent septic infection. The remedy for the second evil is thoroughness.

It is now nearly nine years since I published, in the form of an introductory address at St. Thomas's Hospital, a plea for the more general adoption of antiseptics in midwifery practice.† In that address I brought together, as concisely as possible, the evidence that had been

* Stacpoole (F.), 'Advice to Women on the care of the Health, before, during, and after Confinement.' London, Cassell and Co., 1892, p. 81.

† Cullingworth (C. J.), 'Puerperal Fever a Preventible Disease; a plea for the more general adoption of Antiseptics in Midwifery Practice.' An Address introductory to the Session 1888–9, delivered at St. Thomas's Hospital, Oct. 1st, 1888. London, Churchill, 1888.

gradually accumulated in proof of the preventability of puerperal fever, and I showed, in a series of tables, the magnificent results that had followed the introduction of antiseptic measures into the leading maternity hospitals of Europe and the United States. I have reason to know that the arguments I then brought forward were not without effect upon the practice of individual members of the profession. I ought, perhaps, to apologise for returning to-night to a subject that may seem to many to have been long ago thrashed out. The temptation was indeed great to choose some newer topic for an occasion like the present. But the more I reflected on the matter the more it was borne in upon me that it was my duty once more to raise my voice on behalf of the mothers of this country. The Obstetrical Society of London has always been foremost in the effort to reduce the present terrible mortality from childbirth. It seemed to me that I could not more suitably signalise my succession to this chair than by calling attention to the sad and disappointing fact that has formed the text of this address. If anything I have said shall have the effect of stirring the minds of my professional brethren on this subject, and of diminishing by ever so slight an extent the present terrible death-rate from a disease which is now generally acknowledged, nay proved, to be almost wholly preventible, I shall feel that I have achieved something worthy of the occasion and have done something towards justifying your choice of a President.

APPENDIX OF TABLES.

TABLE IV.—*Puerperal Fever; Cases notified in London Sanitary Districts*, 1891–5.

	Population, Census, 1891.	1891.	1892.	1893.	1894.	1895.
West—						
Paddington	117,846	4	7	18	5	8
Kensington	166,308	5	13	9	8	7
Hammersmith	97,239	5	6	18	5	2
Fulham	91,639	9	10	18	9	6
Chelsea	96,253	2	6	5	10	8
St. George, Hanover Square	78,364	3	2	3	1	1
Westminster	55,539	4	3	5	—	2
St. James	24,995	1	1	3	1	1
North—						
Marylebone	142,404	2	6	10	10	7
Hampstead	68,416	5	8	5	5	4
Pancras	234,379	8	26	24	12	18
Islington	319,143	33	50	40	24	22
Stoke Newington	30,936	16	16	18	1	1
Hackney	198,606				14	13
Central—						
St. Giles	39,782	1	1	2	—	1
St. Martin-in-the-Fields	14,616	—	—	—	—	—
Strand	25,122	1	1	—	—	—
Holborn	33,485	1	3	2	—	1
Clerkenwell	66,216	2	3	1	4	4
St. Luke	42,440	—	1	2	—	2
London, City of	37,487	—	1	—	1	2
East—						
Shoreditch	124,009	4	11	10	5	2
Bethnal Green	129,132	13	14	18	8	7
Whitechapel	73,552	1	11	9	7	1
St. George-in-the-East	45,795	1	5	5	3	1
Limehouse	57,376	3	7	6	3	2
Mile End Old Town	107,592	2	13	5	4	3
Poplar	166,748	6	12	10	8	8
South—						
St. Saviour, Southwark	27,177	2	2	1	1	1

Newington	115,804	5	5	6	6	9
St. Olave	12,723	—	—	1	—	1
Bermondsey	84,682	2	5	5	1	4
Rotherhithe	39,255	1	2	4	2	—
Lambeth	275,203	10	17	27	16	16
Battersea	150,558	27	15	19	13	10
Wandsworth	156,942	10	13	20	20	7
Camberwell	235,344	8	15	23	16	16
Greenwich	165,413	10	9	22	17	17
Lewisham	92,647	4	4	11	10	8
Woolwich	40,848	3	3	1	3	2
Lee	36,103	} 6	7	10	{ —	3
Plumstead	52,436				{ 1	6
Total	—	221	338	400	254	236

TABLE V.—*Births in London Sanitary Districts*, 1891–5.

	Population, Census, 1891.	1891.	1892.	1893.	1894.	1895.
West—						
Paddington	117,846	2,952	2,936	3,010	2,837	2,977
Kensington	166,308	3,847	3,708	3,671	3,673	3,621
Hammersmith	97,239	2,910	2,914	2,966	2,901	2,909
Fulham	91,639	3,476	3,496	3,711	3,763	3,930
Chelsea	96,253	2,818	2,784	2,854	2,700	2,734
St. George, Hanover Square	78,364	1,610	1,519	1,496	1,501	1,470
Westminster	55,539	1,506	1,375	1,358	1,235	1,284
St. James	24,995	512	529	528	464	542
North—						
Marylebone	142,404	4,504	4,344	4,379	4,304	4,400
Hampstead	68,416	1,514	1,456	1,507	1,472	1,453
Pancras	234,379	7,175	7,140	7,044	6,967	7,118
Islington	319,143	9,797	9,556	9,750	9,500	9,879
Stoke Newington	30,936	}			{ 757	813

	Population, Census, 1891.	1891.	1892.	1893.	1894.	1895.
Central—						
St. Giles	39,782	1,146	1,129	1,094	1,069	1,120
St. Martin-in-the-Fields	14,616	252	246	223	233	189
Strand	25,122	630	576	594	547	612
Holborn	33,485	917	885	864	832	821
Clerkenwell	66,216	2,222	2,174	2,106	2,180	2,083
St. Luke	42,440	1,923	1,904	1,770	1,879	1,904
London, City of	37,487	667	665	627	525	553
East—						
Shoreditch	124,009	4,593	4,487	4,450	4,332	4,352
Bethnal Green	129,132	4,998	4,911	4,756	4,636	4,771
Whitechapel	73,552	3,066	3,053	3,096	3,178	3,130
St. George-in-the-East	45,795	1,954	1,877	1,966	1,877	1,972
Limehouse	57,376	1,978	1,930	1,953	1,906	2,035
Mile End Old Town	107,592	4,109	4,013	4,146	4,042	4,204
Poplar	166,748	6,103	5,864	5,918	5,800	6,071
South—						
St. Saviour, Southwark	27,177	859	844	780	770	830
St. George, Southwark	59,712	2,165	2,149	2,169	2,071	2,188
Newington	115,804	4,192	4,094	4,345	4,201	4,234
St. Olave	12,723	404	463	412	431	428
Bermondsey	84,682	3,200	3,177	3,202	3,095	3,212
Rotherhithe	39,255	1,466	1,318	1,379	1,353	1,304
Lambeth	275,203	9,097	9,226	9,222	9,231	9,341
Battersea	150,558	5,237	4,990	5,225	5,024	5,264
Wandsworth	156,942	4,481	4,227	4,569	4,423	4,721
Camberwell	235,344	7,338	7,480	7,472	7,382	7,528
Greenwich	165,413	5,412	5,413	5,377	5,374	5,475
Lewisham	92,647	2,474	2,314	2,471	2,457	2,519
Woolwich	40,848	1,345	1,236	1,302	1,271	1,331
Lee	36,103	2,671	2,839	2,744	794	826
Plumstead	52,436				1,910	1,877
Total	—	134,480	131,999	133,417	130,970	134,197

TABLE VI.—*Proportion of Notified Cases to Number of Births in the separate Parishes of London.*

West.	No. of notified cases, 1891–5.	Births, 1891–5.	No. of cases per 1000 births.
Paddington	42	14,712	2·85
Kensington	42	18,520	2·26
Hammersmith	36	14,600	2·46
Fulham	52	18,176	2·86
Chelsea	31	13,890	2·23
St. George, Hanover Square	10	7,596	1·31
Westminster	14	6,758	2·06
St. James	7	2,575	2 71
North.			
Marylebone	35	21,931	1·59
Hampstead	27	7,402	3·64
St. Pancras	88	35,444	2·48
Islington	169	48,482	3·48
Stoke Newington and Hackney	79	34,444	2·29
Central.			
St. Giles	5	5,558	0·89
St. Martin-in-the-Fields	—	1,143	0·00
Strand	2	2,959	0·67
Holborn	7	4,319	1·62
Clerkenwell	14	10,765	1·30
St. Luke	5	9,380	0·53
London, City of	4	3,037	1·31
East.			
Shoreditch	32	22,214	1·47
Bethnal Green	60	24,073	2·49
Whitechapel	29	15,523	1·86
St. George-in-the-East	15	9,646	1·55
Limehouse	21	9,792	2·14
Mile End Old Town	27	20,514	1·31
Poplar	44	29,756	1·47
South.			
St. Saviour, Southwark	7	4,083	1·71
St. George, Southwark	11	10,742	1·02
Newington	31	21,066	1·47
St. Olave	2	2,138	0·93
Bermondsey	17	15,886	1·07
Rotherhithe	9	6,820	1·31
Lambeth	86	46,117	1·86

	No. of notified cases, 1891-5.	Births, 1891-5.	No. of cases per 1000 births.
Battersea	84	25,740	3·25
Wandsworth	70	22,421	3·12
Camberwell	78	37,200	2·09
Greenwich	75	27,051	2·77
Lewisham	37	12,235	3·02
Woolwich	12	6,485	1·85
Lee, Plumstead	33	13,661	2·41
Total	1449	665,063	2·17

Total number of deaths for the whole of London during the same period, 1305.

Dr. PLAYFAIR moved—"That the thanks of the Society be given to Dr. Cullingworth for his Inaugural Address, and that he be requested to allow it to be published in the 'Transactions.'"

Dr. CHAMPNEYS seconded this, and it was carried unanimously.

THE CYCLICAL OR WAVE THEORY OF MENSTRUATION, WITH OBSERVATIONS ON THE VARIATIONS IN PULSE AND TEMPERATURE IN RELATION TO MENSTRUATION.

By Arthur E. Giles, M.D., B.Sc., M.R.C.P.Lond., F.R.C.S.Edin.,

(Received November 13th, 1896.)

(*Abstract.*)

This paper is based on observations on the temperature and the pulse before, during, and after menstruation.

The temperature observations embrace fifty menstrual periods in forty-five patients; from the fifty cases a composite curve has been drawn up (Chart I), which may be regarded as the type of the temperature curve in relation to menstruation. It shows that the temperature is lowest at the middle of the intermenstrual period; it gradually rises, attaining its maximum two days before menstruation. There is a sudden drop on the day preceding the flow, with a second slighter drop at the end of the period. It rises slightly for the first week after the cessation of menstruation, and there is a third fall at the beginning of the intermenstrual period.

The observations of Jacobi and Reinl have similarly been employed in the construction of composite curves (Chart II); these present features similar to those shown by the author's curve.

The pulse.—Sphygmographic tracings have been obtained from seven patients, covering nine menstrual periods, and forty observations. They show that the blood-pressure is greatest on the first two days of menstruation and on the day preceding; it

is lower during the remainder of the period, rising again slightly after its cessation.

The total variation, both in temperature and pulse, is comparatively limited.

The author then discusses the bearing of these facts on the cyclical theory of menstruation, and concludes that this theory as ordinarily stated is insufficient as an explanation of the origin of menstruation. But taken in a modified form, the cyclical or periodic theory may be accepted as giving a connected idea of the meaning of menstruation, which may be regarded as the conclusion of the reproductive phase of an alternation of nutritive and reproductive activity, or in other words as a repeated preparation for the reception and nutrition of a fertilised ovum. In the absence of such an ovum menstruation occurs as a "missed pregnancy."

THE cyclical theory of menstruation supposes that menstruation is the result of a periodic "variation of metabolic activity" or "nutrition wave," of which the outward manifestations are alterations in the temperature, blood-pressure, and daily excretion of urea. Each complete series of variations occupies a monthly or menstrual cycle.

As far back as 1838 Fricke (1)* made some observations on the temperature in relation to menstruation; he found the temperature to be slightly higher during menstruation than before.

In 1867 William Squire communicated a paper to the 'Obstetrical Transactions,' (2) in which he stated that there was "a considerable fall in temperature on the occurrence of the catamenia, and a variable rise shortly before."

In 1870 Rabuteau (3) found that during the first five or six days that follow menstruation, and for a day or two before its return, the elimination of carbonic acid was much the same in a woman as in a man; but during the menstrual period it was notably less. His explanation was that owing to the hæmorrhage the blood had less oxygenating power. He then tested the amount of urea excreted by the kidneys, and found a fall in the daily

* See list of references at the end of the paper.

amount just before menstruation, the quantity rising again in the intermenstrual period. He made observations also on the temperature and pulse.

More exact and careful observations were made by Henning (4), Goodman (5), Jacobi (6), Stephenson (7), Reinl (8), and others; as these are better known than the above, I shall not refer to them in detail. The general results at which they arrive are as follows:

1. *Urea.*—The maximum daily excretion is just before, and the minimum just after, menstruation. During menstruation there is a gradual diminution, and in the intermenstrual period there is a gradual rise.

2. *Temperature.*—There is a slight rise in the week immediately preceding menstruation, followed by a fall immediately before the flow begins. A second rise occurs while menstruation lasts.

3. *Pulse.*—The pulse-curve corresponds fairly closely with that of the temperature.

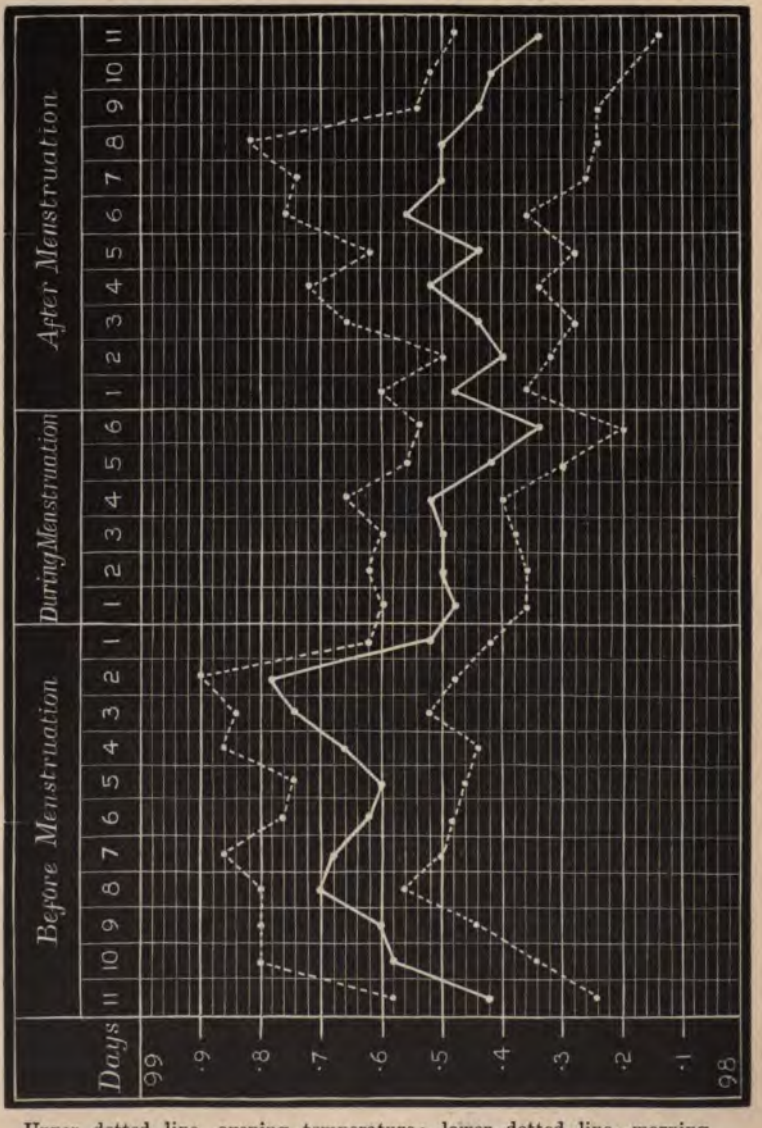
4. *Blood-pressure.*—There is a well-marked fall with the onset of menstruation, or shortly before; while the flow lasts, the pressure remains below the average, rising again when that has ceased.

I submit here some observations bearing on these points. I have not entered into the question of the excretion of urea because of the difficulty of making observations in sufficient number and regularly enough to be reliable. I have also left aside the subject of the pulse-rate, as being too readily influenced by trifling and transitory causes.

Temperature.—My calculations are based on fifty menstrual periods occurring among forty-five patients at the Chelsea Hospital for Women. These patients were such as were admitted for trifling conditions, such as ruptured perinæum, stenosis of the os externum, urethral caruncle, cervical erosion, &c.; many of them had no operation performed; and in the case of the remainder, the observations were either made before operation, or begun at least a week after operation.

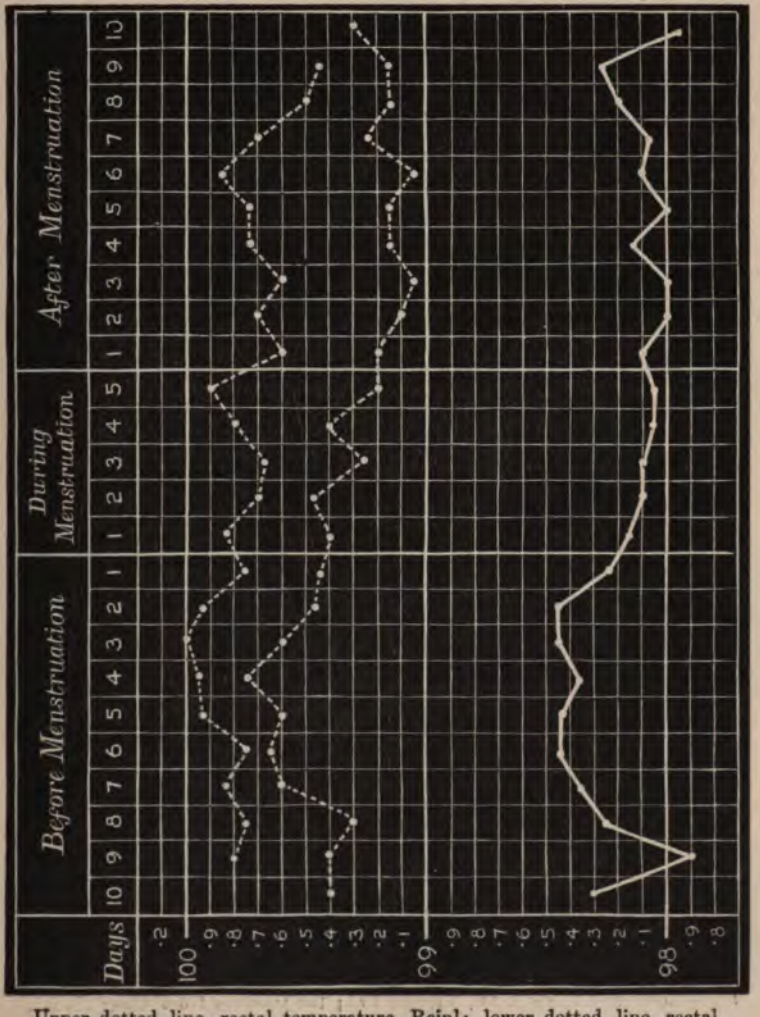
Jacobi, Goodman, and Reinl give the records or curves

CHART I.—A Composite Chart of the Temperature in Relation to Menstruation, based on fifty observations.



Upper dotted line, evening temperature; lower dotted line, morning temperature; continuous line, mean temperature. The temperature was taken in the mouth.

CHART II.—A Composite Chart of the Temperature in Relation to Menstruation, based on twelve observations by Jacobi and seventeen observations by Reinl.



Upper dotted line, rectal temperature, Reinl; lower dotted line, rectal temperature, Jacobi; continuous line, axillary temperature, Jacobi.

of the temperature in individual cases; but to obviate individual variations I have chosen the plan of making a composite chart, giving the average of the temperatures during the fifty menstrual periods. This was done by taking the average of all the temperatures on the first, second, third, &c., days before, during, and after menstruation. The result is shown in Chart I.

From this it is seen that the temperature begins to rise about the middle of the intermenstrual period, attaining its maximum two days before menstruation. There is a sudden drop on the day before the flow begins, with a second slighter drop towards the end of the period. It then rises slightly for the first week after the cessation of menstruation, and there is a third fall at the beginning of the intermenstrual period. The chart may be regarded as a magnified curve, as it gives the temperature to two decimal points of a degree. The total variation only amounts to half a degree Fahrenheit.

For the sake of comparison I have treated the observations of Jacobi and Reinl in the same way, in Chart II, converting Reinl's from Centigrade to Fahrenheit. The general correspondence of the curves on Chart II with that on Chart I is a close one.

Blood-pressure as indicated by sphygmographic tracings.—Jacobi gives some sphygmographic tracings of the pulse in relation to menstruation, but they are hardly satisfactory; and accordingly I submit some taken from seven patients.* In Case No. VI the observations extended over three menstrual periods. The tracings were taken with Dudgeon's sphygmograph, and in each case the same amount of pressure was employed for all the records in that case.

These tracings show that the variations in blood-pressure are neither very striking nor constant; but the broad generalisation is permissible that the blood-pressure on the

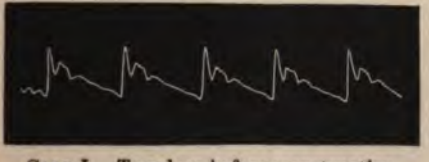
* Of the forty tracings obtained, fifteen of the most typical are here reproduced from Cases I, IV, VI, and VII; the tracings from Cases II, III, and V showed similar features.

first two days of menstruation and on the day preceding is greater than it is at other times. This is illustrated in Case I, Figs. 2 and 3; Case IV, Figs. 5 and 6; Case VI, Figs. 9 and 10; Case VII, Figs. 14 and 15. In all these tracings there is a tendency to the blunting of the initial rise, to the diminution of secondary oscillations, and to a gradual rather than to a sudden descent.

Further, after the conclusion of menstruation, a similar tendency to a slight raising of pressure is seen.

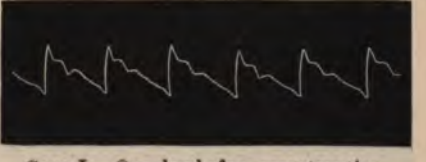
Pulse Tracings in relation to Menstruation.

FIG. 1.



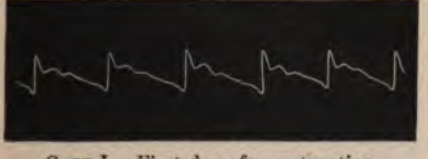
CASE I.—Two days before menstruation.

FIG. 2.



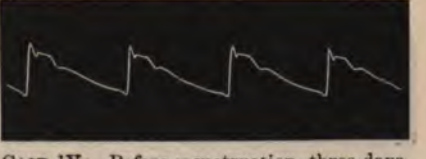
CASE I.—One day before menstruation.

FIG. 3.



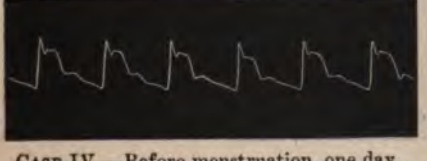
CASE I.—First day of menstruation (12 hours after onset).

FIG. 4.



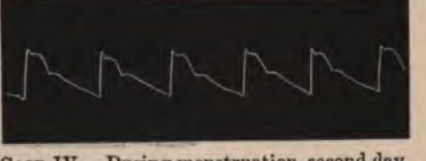
CASE IV.—Before menstruation, three days.

FIG. 5.



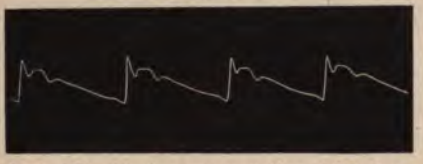
CASE IV.—Before menstruation, one day.

FIG. 6.



CASE IV.—During menstruation, second day.

FIG. 7.

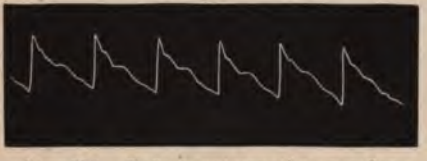


CASE IV.—During menstruation, fifth day.

FIG. 8.

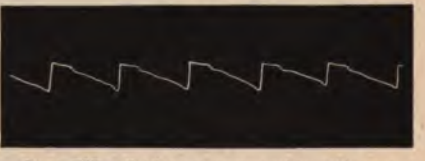
CASE IV.—After menstruation.

FIG. 9.



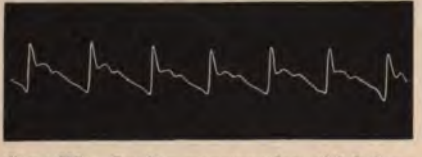
CASE VI.—Before menstruation, one day.

FIG. 10.



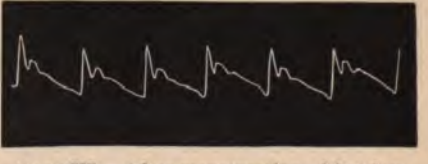
CASE VI.—Before menstruation, 5 hours.

FIG. 11.



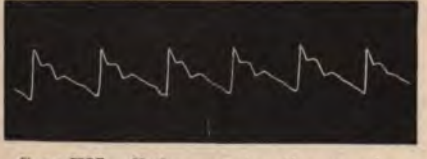
CASE VI.—During menstruation, third day.

FIG. 12.



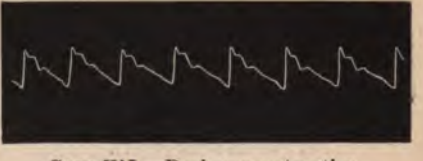
CASE VI.—After menstruation, third day.

FIG. 13.



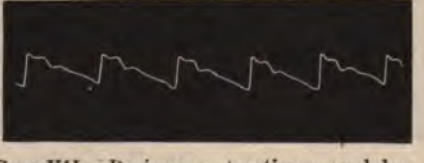
CASE VII.—Before menstruation, one day.

FIG. 14.



CASE VII.—During menstruation (3 hours after onset).

FIG. 15.



CASE VII.—During menstruation, second day.

Ott, of St. Petersburg (9), who examined the blood-pressure with Basch's apparatus, found that in thirteen cases out of fourteen there was a considerable fall of blood-pressure with the onset of menstruation; during the flow the pressure remained almost constantly under the average, and it rose again after the cessation of the flow.

As regards the bearing of these facts on the cyclical theory of menstruation, I may remark that while the existence of periodic metabolic variations appears to be established beyond doubt, the small extent of those variations renders it highly improbable that they are in any sense the cause of menstruation. They can only be regarded as associated phenomena. The cyclical theory was at first intended to supply a better explanation of menstruation than was afforded by the then prevalent ovular theory; for while the latter was supported by certain facts, there were others which compelled to the conclusion that no explanation was adequate that was based on local conditions alone. But as defined at the beginning of this paper, the cyclical theory is, like the ovulation theory, insufficient. So also, to speak of the changes associated with menstruation as due to a "menstrual wave" passing over the body functions, is merely to re-state the facts without explanation.

A modification of the cyclical theory may, however, be accepted, as giving a connected idea of the meaning of menstruation, without raising the question of its proximate cause, and it might be summarised as follows:—There is in the female organism a tendency to the alternation of nutritive and reproductive activity; this alternation presents a monthly character, but to inquire why is as fruitful as to ask why the respiratory rhythm should occupy about four seconds, or the cardiac cycle something under one second.

Periodically, then, the body prepares itself to take on reproductive functions; in this preparation the vaso-motor system acts as chief agent, its agency being shown in variations of temperature, pulse, and nervous manifesta-

tions, as well as in ovarian and uterine changes. The latter consist in preparations for the protection and nutrition of a developing ovum; for the period of growth of the menstruating uterus corresponds closely to the early stages in the formation of the decidua of pregnancy. If, however, no fertilised ovum be ready, a miniature abortion occurs; for the nidus of the early embryo must always be freshly prepared. The menstrual discharge takes place, and the uterus, after a period of rest, begins its preparations anew.

Menstruation has therefore been correctly described as a "missed pregnancy."

References.

(1) *Fricke.* "Recherches sur la température du Vagin et de la Matrice, avant, pendant, et après les règles," 'Journ. de Fritsch et Oppenheim;' abst. in 'Gazette médicale,' 1838, p. 818.

(2) *Wm. Squire.* "Puerperal Temperatures," 'Obstet. Trans.,' vol. ix for 1867, p. 130.

(3) *Rabuteau.* 'Gaz. méd. de Paris,' 1870, p. 616, and 'Gaz. hebdom.,' 1870.

(4) *Henning.* "Die Temperatur in der Menstruation," 'Arch. f. Gyn.,' Bd. ii, Heft 2.

(5) *Goodman.* "The Cyclical Theory of Menstruation," 'Amer. Journ. of Obst.,' vol. xi, p. 673.

(6) *Jacobi.* 'The Question of Rest for Women during Menstruation,' New York, 1877.

(7) *Stephenson.* "On the Menstrual Wave," 'Amer. Journ. of Obst.,' vol. xv, p. 287.

(8) *Reinl.* "Die Wellenbewegung der Lebensprocesse des Weibes," 'Volkmann's Sammlung,' No. 243.

(9) *Ott.* Quoted by Reinl, *supra.*

APRIL 7TH, 1897.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Present—50 Fellows and 4 visitors.

The President announced that the following reply to the letter of condolence received from the Gesellschaft für Geburtshülfe und Gynäkologie in Berlin had been sent.

"The President and Fellows of the Obstetrical Society of London have received with high appreciation the message of condolence sent by the Gesellschaft für Geburtshülfe und Gynäkologie of Berlin, on the death of Sir Thomas Spencer Wells, Bart.

"They feel deeply as Fellows of the Society of which Sir Spencer Wells was so distinguished an ornament, and also as fellow-countrymen of his, the sympathy which prompted their colleagues in Berlin to so thoughtful an action.

"Such sympathy, coming as it does from a Society composed of the most distinguished obstetricians and gynæcologists in Europe, will be ever remembered by the Obstetrical Society of London, as showing the bonds of brotherhood which exist between the scientific workers of Germany and Great Britain.

"Signed on behalf of the Obstetrical Society of London.

C. J. CULLINGWORTH, *President.*
W. R. DAKIN, } *Secretaries.*"
JOHN PHILLIPS, }

Books were presented by Sir Henry W. Acland, Dr. Herbert R. Spencer, Dr. Hector Treub, the St. Thomas's Hospital Staff, and the Society of Medical Sciences of Lyons.

William Murray Leslie, M.D.Edin.; Llewellyn C. P. Phillips, M.B., B.C.Cantab.; J. Lockhart Downes, M.B., C.M.Edin.; Alfred Bienemann, M.B., C.M.Edin.; and Arthur Francis Stabb, M.B., B.C.Cantab. were admitted Fellows of the Society.

ENCYSTED TUBERCULOUS PERITONITIS AND ITS EFFECTS UPON THE FEMALE PELVIC VISCERA.

Shown by J. H. Targett, M.S., F.R.C.S.

The specimen exhibited this evening was presented to the Museum of the Royal College of Surgeons by Dr. Ward Cousins, and I am indebted to him for the following clinical notes, and for his kind permission to make use of the case. The specimen shows marked changes in the relations of the pelvic portion of the peritoneum, as the result of a chronic tuberculous peritonitis.

Clinical history.—The patient was a widow, aged 39 years, who suffered from epilepsy. She had been married three and a half years, and had had three children and one miscarriage. Menstruation was regular until twelve months before the patient came under observation, and since that time it had been entirely absent. A swelling in the lower part of the abdomen began about eighteen months previously, and gradually enlarged. On admission to a hospital the abdominal swelling was thought to be ovarian or parovarian. There was distinct fluctuation in all directions, and the uterus was fairly moveable. Laparotomy was performed, and a large cavity opened. It extended up to the liver, and the intestines were behind

it, their outlines being visible through the posterior or deep wall of the cavity. The contents consisted of clear fluid with a few flakes of lymph or coagulum. The patient died one month after the operation from chronic bronchitis. No evidence of tuberculosis was detected at the autopsy, but the examination was incomplete.

Description of specimen.—The specimen consists of the pelvic viscera and the lower part of the peritoneal cavity. The peritoneum lining these structures is greatly thickened, and its inner surface is roughened. It has the following distribution :—After lining Douglas's pouch the thickened serous membrane covers the posterior surface of the uterus, and then passes directly from the fundus uteri to the back and apex of the bladder, the utero-vesical pouch being entirely obliterated. In this manner an inch and a half of the bladder is covered immediately above the fundus uteri, and the membrane passes thence to the anterior abdominal wall.

The broad ligaments are so incorporated with the thickened peritoneum in front that their outlines are lost. Thus it has come to pass that there is but one pouch in the pelvic cavity, the anterior wall of which is formed by the upper end of the vagina, the posterior surface of the uterus, and the top of the bladder, arranged in order from below upwards in the median line. On either side of the uterus the anterior wall of the cavity is formed by the broad ligaments and adjacent pelvic peritoneum, which are inseparably blended. The posterior limits of the cavity under description are formed by thickened peritoneum overlying the rectum, the end of the ileum, and the cæcum with its appendix. The appendix cæci is two inches long, and forms a thick cord the size of the fore-finger which bridges over the cavity, and is firmly attached to the rectum about on a level with the brim of the pelvis.

On looking into this cavity from above, two sessile papillomatous masses are seen upon its lateral walls. These are found to be the thickened fimbriæ surrounding

the abdominal ostia of the Fallopian tubes. The ostium of the left tube is so far back that it is in close contact with the rectum ; while that on the right side is one inch below the level of the cæcum, and also much posterior to the plane of the uterus. Two small rounded swellings on the lateral walls of the cavity near the ostia of the tubes indicate the sites of the ovaries. By dissecting the pelvic viscera from in front, the position of the various structures in the broad ligaments has been verified. After the removal of much inflammatory tissue the Fallopian tubes, ovaries, and round ligaments have been displayed from the front. The right tube is very tortuous and thus shortened, but its wall is in no way thickened, and the abdominal ostium is patent. The right ovary is shrunken, and measures three quarters of an inch in its chief diameter. On section a few small dilated follicles are seen. The uterine vessels are very numerous, large and tortuous. On the left side the ovary and Fallopian tube have much the same appearance, but the ovary is even more shrunken than the right. The left abdominal ostium is likewise patent.

Microscopical examination of the thickened peritoneum which forms the wall of the above-mentioned cavity reveals a typical tuberculous structure. There is an abundance of miliary and caseous tubercles, and the giant-cells are large and numerous.

In another specimen recently shown at the Pathological Society, and now preserved in the College of Surgeons Museum, the effects of tuberculous peritonitis on the female pelvic viscera were very similar. The history of the case was briefly this :—A female lunatic, aged 39, was observed to have a swelling in the left inguinal region extending into the top of the labium. Reduction was effected with a gurgling sound, and the swelling was therefore regarded as a hernia. Some weeks later the patient had a severe attack of vomiting with collapse, and the swelling reappeared. An exploratory operation was performed, and the swelling was found to be a hernial sac

filled with purulent fluid. There was no gut or omentum to be seen, but at the top of the sac there was a small rounded swelling which could not be reduced, and was regarded as a hernia of the left ovary. The patient speedily sank, and at the autopsy extensive tuberculosis of the lungs and peritoneum was found. There was no evidence that any portion of the intestine or omentum had ever been extruded into the hernial sac in the left inguinal canal. The uterus and its appendages were adherent to the front of the pelvis, and their posterior surfaces were plastered over with a thick layer of lymph. But the fimbriated extremities of the Fallopian tubes projected from the wall of the pelvic cavity, as in the preparation already described, and formed a conspicuous object on either side of the cavity. The utero-vesical pouch of peritoneum was entirely obliterated. On careful dissection of the inguinal sac it was found that the swelling in the sac consisted of a prolapsed portion of the left Fallopian tube and mesosalpinx. At a distance of one inch from the uterus the left tube entered the sac, and after forming a twisted loop within the sac it returned to the peritoneal cavity, passing through the neck of the sac about one inch from its abdominal ostium. The left ovary was placed immediately below the mouth of the sac, and was drawn upwards as far as the mesosalpinx would allow. The interior of the uterus showed well-marked tuberculous ulceration.

Remarks.—In both these preparations, and in others which I have had the opportunity of examining, the effects of a primary tuberculous peritonitis upon the female pelvic viscera are manifested by obliteration of the anterior pouch of the peritoneum, and by the viscera being so plastered down with lymph that the broad ligaments and their contents are scarcely recognisable. Yet when dissected out the ovaries and Fallopian tubes are not usually diseased, or if they are affected the tuberculous process has evidently extended from the surrounding tissues. From the matting of parts, however, these structures are almost

necessarily functionless. A remarkable feature is the fact that the abdominal ostia of the tubes have escaped occlusion, thus differing from the results of primary salpingitis; while their fimbriæ have become hypertrophied into prominent outgrowths on the wall of the pelvis. The prolapse of the Fallopian tube in the second specimen must be regarded as a rare complication of an inguinal hernia, which was probably due to the tuberculous peritonitis and the increased intra-abdominal tension. As the inguinal sac increased in size, the already adherent left appendages were gradually drawn into it in the manner described.

CYSTIC OVARIES.

Shown by Dr. Drummond Robinson.

Dr. Drummond Robinson showed two cystic ovaries, the larger the size of a Tangerine orange, removed by anterior colpotomy. The patient had done well.

Dr. Lewers said that he should like to hear from the exhibitor the reasons for removing the smaller of the two ovaries shown. So far as could be judged by inspection as it was passed round, this ovary seemed to be little, if at all, larger than normal.

Dr. Robinson, in reply to Dr. Lewers, said that the specimens were considerably altered in size and appearance by the spirit in which they had been preserved. The shortness of the pedicles was the chief difficulty in the operation. This necessitated leaving a small portion of the hilum of the ovary on the uterine side of the ligatures. The operation was longer than would have been the case if the abdomen had been opened, but the patient had done extremely well. He chose the vaginal method of removal because he thought the operation would be fairly easy, and that it would avoid the risk of an abdominal hernia.

Skiagraph of Dr. Lewers' Monster.

Adlard, imp.

A MONSTER, WITH SKIAGRAPH.

Shown by Dr. Lewers.

Dr. Lewers showed a monster apparently consisting of a somewhat spherical mass of flesh with one limb attached. He also showed a skiagraph of the monster, which brought out the fact that in the apparently shapeless mass was a fairly complete skeleton. The bones of the two lower limbs were present in what seemed to the naked eye to be one limb only.

UTERUS REMOVED BY PAN-HYSTERECTOMY.

Shown by Dr. Lewers.

Dr. Lewers showed a uterus with fibroids removed by abdominal hysterectomy entirely from above by the operation known as "pan-hysterectomy." This was the first case in which he had removed such a uterus entirely from above, though he had done several abdominal hysterectomies by different varieties of the intra-peritoneal method, chiefly by Baer's operation. In the present case the result was quite satisfactory. The operation was not specially difficult, and the patient made a good recovery.

A DECIDUAL CAST OF THE UTERUS, FROM A CASE IN WHICH THERE WAS NO EVIDENCE OF EXTRA-UTERINE GESTATION. WITH MICROSCOPIC SECTIONS.

Shown by Dr. T. W. Eden.

The history of this case, which occurred in the practice of Dr. Herman, was as follows:—The patient was a multipara, having had seven previous pregnancies, the last about two years ago. The last regular menstruation ceased on December 9th, 1896, and was followed by a period of ten and a half weeks' amenorrhœa; during this time the patient herself doubted whether she was really pregnant, because the morning sickness was much less severe than she had usually experienced. On February 21st, 1897, hæmorrhage set in without warning, and on the following day the cast shown was passed; after this the hæmorrhage ceased, and the patient made an uninterrupted recovery.

Until the specimen came to be closely examined the case was regarded as one of abortion. But on carefully looking at the specimen it was seen to be an almost complete cast of the uterine cavity, triangular in shape, measuring 4 inches from base to apex, 3½ inches across the broadest part, and varying in thickness from 3 to 8 millimetres. The outer surface was rough and irregular, with fragments of blood-clot adherent to it; the inner surface was dull and glistening, and thrown into numerous longitudinal folds. There was no trace of placental tissue, of amnion, umbilical cord, or fœtus. The internal surface was minutely examined for any appearances which might indicate the formation of an early placental site, but nothing of the kind could be detected.

A dozen small pieces were then taken from different parts for microscopic examination; all of them showed

FIG. 1.—Vertical section through entire thickness of cast. × 15. Logwood and eosine.

A. Superficial compact layer.
a'. Surface denuded of epithelium.
B. Deep cavernous layer.
h. Large central hæmorrhage.
N. Smaller hæmorrhages in deep layer.
G. Glandular spaces.

FIG. 2.—Vertical section through deep layer, to show formation of decidual cells and vascular changes. × 48. Logwood and eosine.

D. Decidual cells.
V V. Two sections through a coiling serotinal artery, showing irregular thickening of the vessel walls.
V'. Another artery, showing early thickening limited to one side of the wall.
G. Long glandular channel.

FIG. 3.—Section through surface, to show superficial hæmorrhages and degeneration of decidual cells. × 30. Logwood and eosine.

H. Hæmorrhages; the right half of the figure is almost entirely occupied by a large hæmorrhage.
D. Degenerating decidual cells.
G. Mouth of gland.

Fig. 1.

Bale, Danielsson, Ltd.

Fig. 2.

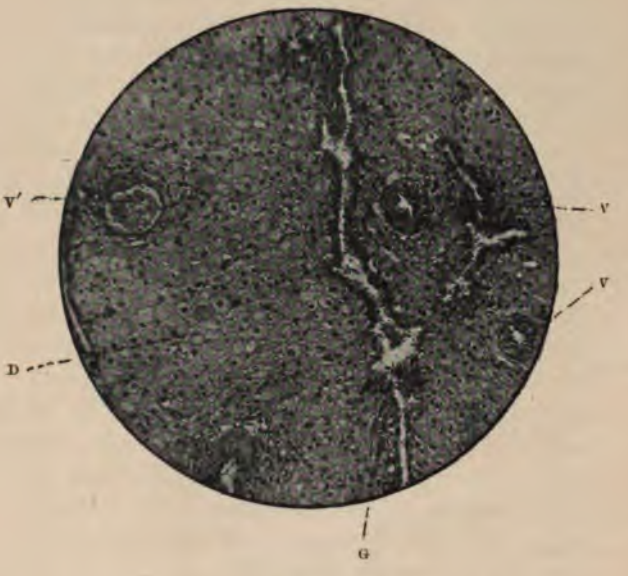
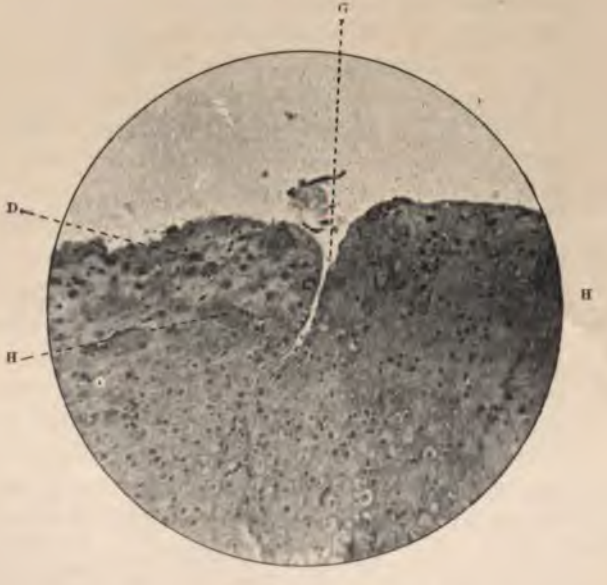


Fig. 3.



essentially the same structural characters. No fœtal tissues were discovered in any part, and the membrane consisted of a well-formed and typical decidua, such as is often discharged from the uterus in cases of extra-uterine gestation. But Dr. Herman said that there was no sign or symptom whatever of extra-uterine pregnancy, and that explanation therefore did not appear to be valid. This case must accordingly be classed along with those reported to this Society by Dr. Griffith (vol. xxxvi, p. 335) and Dr. Dakin (vol. xxxviii, p. 385), in which similar casts of the uterus were discharged, and yet extra-uterine pregnancy was not present. In both of these cases the patient was submitted to abdominal section: in Dr. Griffith's case no morbid condition was found; in Dr. Dakin's case a lump, supposed on clinical examination to be the extra-uterine gestation sac, turned out to be a small ovarian cyst, and both Fallopian tubes were healthy. In these cases the evidence of the non-existence of an extra-uterine pregnancy was apparently conclusive; in Dr. Herman's case the evidence was of a different character, but no other conclusion seemed possible from the clinical data.

In view of these three cases it was no longer possible to regard the discharge of a decidual cast of the uterus as a pathognomonic sign of extra-uterine pregnancy. And it further became necessary to reconsider the much wider question whether pregnancy is a condition essential to the formation of a decidual membrane at all. It had been known for a long time that scattered decidual cells might be developed in the endometrium in conditions other than pregnancy; but until these cases were published the complete conversion of that membrane into the decidua was regarded as resulting from pregnancy alone. It was doubtful if even this view could now be maintained.

In one or two minor points the structure of this cast differed from that of the true decidua vera; the distinction between compact and spongy layers was less definite, the glandular spaces were smaller and less numerous, and there was much less leucocytic infiltration. But it was

doubtful whether these points could be relied upon as distinctive. In this cast there were also certain pathological changes which deserved notice. The arteries showed wide-spread thickening of the intima, leading in most cases merely to deformity of the lumen, but in a few causing almost complete obliteration (Fig. 2). There were also marked œdema, and congestion, and very extensive interstitial hæmorrhages (Figs. 1 and 3); the decidual cells and the walls of the capillaries showed early fatty degeneration in many parts of the membrane. It was possible that these changes were not due to any definite pathological factor, but merely represented the natural process of preparation of the membrane for its exfoliation.

DEFORMED FŒTUS.

Shown by Mr. Bottomley (introduced by Dr. Dakin).

Mr. Bottomley showed a fœtus whose face was deformed, owing apparently to want of development of the fronto-nasal process.

FŒTUS COMPRESSUS *s.* PAPYRACEUS.

Shown by Mr. Bottomley.

SPECIMEN OF ECTOPIC PREGNANCY GOING NEARLY TO TERM IN THE PERITONEAL CAVITY, THE PLACENTA BEING ATTACHED TO THE TOP OF THE UTERUS.

Shown by Dr. HERMAN.

E. M—, aged 34, admitted into Victor Ward, London Hospital, on March 17th, 1897. She had been married fourteen years, and had had five children, the last three years and a half ago; no miscarriages. Since the birth of the last child she had been regular till twelve months ago. She then thought that she had become pregnant, and expected her confinement about three months ago. During the first nine months she suffered on and off from much abdominal pain, which had been rather less the last three months. It had been so bad as to oblige her to keep her bed a good deal. The patient had been subject to epileptic fits since childhood, and her memory was bad, so that it was impossible to get from her very exact details as to her symptoms. For the first nine months her belly had been enlarging; during the last three months she thought it had been getting rather less. In other respects than these she thought her health had been good.

On admission her chief complaint was of intermittent gnawing pain across the lower abdomen. On abdominal examination there was found a hard, nodular, moveable swelling, rising out of the pelvis to a hand's breadth above the umbilicus. It was dull on percussion, while the flanks were resonant. On the right side it extended to the anterior superior iliac spine, on the left to within three fingers' breadth from it. The umbilicus projected. No murmur of any kind was heard over the swelling. The girth at level of umbilicus was 32 inches; midway between pubes and umbilicus 33 inches. Distance from umbilicus to right anterior superior iliac spine 6½ inches; to left 6¼

inches; to pubes 7 inches; to ensiform cartilage 5½ inches. On vaginal examination, slight hæmorrhage was found. Neither blueness of the genital mucous membrane nor softening of the cervix were marked. The cervix was normal in position and direction. The abdominal swelling and the cervix moved together, and the body of the uterus could not be defined apart from the tumour. The sound entered in the normal direction for five inches.

From these signs it was thought that the tumour was a fibroid; and on account of the severity of the pain and rapidity of its growth, its removal was advised. This was undertaken on March 23rd.

On opening the abdomen, many fine adhesions with serous fluid in their meshes were found uniting the tumour to the abdominal wall, bowel, and omentum. The incision was extended from the pubes to 2½ inches above the umbilicus, and the tumour was brought out of the belly. It was covered with a thick, dirty yellow membrane, and when part of this was detached, a fœtus was seen to be within it. The fœtus was extracted. The thrombosed placenta was seen as a solid mass, attached to the top of the uterus. Below it on the left side was a convoluted, thin-walled swelling, evidently a hydrosalpinx. On the right side below the placenta, and connected by a stalk with the uterus, was a swelling containing fluid about the size of a large walnut; but adhesions prevented the relations of this swelling from being identified. Douglas's pouch extended unusually low down, and was free from adhesions, except those connected with the hydrosalpinx. Attached to the right broad ligament behind was an elongated yellowish body, about the size of the last phalanx of the thumb, which when grasped was easily detached. On section it contained cheesy matter. The body of the uterus was secured with Lawson Tait's clamp in the lower angle of the wound; and the top of the uterus, with the placenta attached to it, was cut off. The bleeding from torn adhesions was insignificant, and the belly was closed. The stump of the uterus was dressed with equal parts of iodoform and tannin.

The patient recovered without fever or other bad symptom, except that she had an epileptic fit on March 26th. The clamp was removed on April 6th.

The fœtus was a female, weighing 2 lbs. 8 oz., and 15 inches in length. It presented no deformity. The mass of thrombosed placenta measured 4 inches by 4¼ inches. At its lower part a Fallopian tube could be traced for 5½ inches; it was thickened, but not dilated nor tortuous.

This was a case of extra-uterine pregnancy going nearly to full term in the peritoneal cavity, then the fœtus dying and the amniotic fluid being absorbed, the placenta being attached to the top of the uterus. The explanation that Dr. Herman thought probable was that the pregnancy began in the ampulla of the tube; that the chorion protruded towards the peritoneal cavity; that at this time, from some cause that he could not explain, the end of the tube was near the top of the uterus, and so the chorionic villi became attached to this part. It was certainly not a gestation under the peritoneum.

Dr. Herman was unable to point out any physical signs by which this tumour, before operation, could have been distinguished from a fibroid. Its hardness, nodular feel, movement together with the cervix, and the elongation of the uterine canal, were all signs generally indicative of fibroid enlargement of the uterus.

The sac containing cheesy matter was afterwards examined microscopically. Its wall consisted of a loose meshwork of fibrous tissue, infiltrated with round cells, and amorphous stuff in the meshwork. From these appearances it was thought to be the ovary.

THE TREATMENT OF PLACENTA PRÆVIA BY CHAMPETIER DE RIBES' BAG.

By G. F. Blacker, M.D., M.R.C.P., F.R.C.S.

(Received January 8th, 1897.)

(*Abstract.*)

In the more severe cases of hæmorrhage from placenta prævia Champetier de Ribes' bag may be employed in place of version by introducing it into the amniotic cavity after rupture of the membranes. Used in this way, the bag acts not only as a tampon in arresting the hæmorrhage by pressing the separated portion of placenta firmly against the uterine wall, but also as a dilator of the cervical canal, and a very powerful stimulus to uterine contractions. The use of the bag is therefore advocated in grave cases of hæmorrhage from placenta prævia as an easy method of arresting the hæmorrhage, and at the same time as likely to reduce the heavy fœtal mortality which usually occurs in these cases after the performance of version.

The author has treated 5 cases of placenta prævia in this way, and has collected 17 other cases similarly treated. The details of these cases are given in full in the tables. An analysis of the chief features of interest in the cases is given, showing that in only one case did severe hæmorrhage occur after the introduction of the bag; that such hæmorrhage may, as a rule, be readily controlled by traction upon the bag, that in none of the cases was any difficulty experienced in introducing the bag, nor was preliminary dilatation of the cervix necessary; and that the average length of time required for the complete dilatation of the cervix after the introduction of the bag was five hours and ten minutes.

Of the mothers, one died of septicæmia—probably present on her admission to the hospital—before the introduction of the bag. Of the others, 5 had a slight elevation of temperature during the puerperium, the highest point reached being 100·6°; while in the remainder recovery was perfect, and the puerperium afebrile. Of the 22 children, 14 were born alive, and 8, or 36·3 per cent., dead. Of the 14, 4 subsequently died, giving a total mortality of 54·5 per cent.

The advantages claimed for the bag are—

1. Ease of introduction.
2. The certain arrest of the hæmorrhage.
3. That any further hæmorrhage is controllable by traction upon the bag.
4. That the bag, and not the child's body, dilates the cervical canal.
5. The ease of delivery after expulsion of the bag.
6. The fact that the bag is a very powerful stimulus to uterine action.
7. The lessened fœtal mortality as compared with the results obtained after version.

The objections brought against the bag are considered, viz. the risk of septic infection, the danger of rupture of the uterus, and the displacement of the presenting part caused by its introduction.

The further objections that the bag is difficult to introduce, and that preliminary dilatation of the cervix is required, are shown to be groundless.

Even in cases of central placenta prævia the use of the bag is practicable, and likely to give just as good if not better results than the performance of version.

THE best mode of treatment in cases of placenta prævia is a matter upon which even at the present day there is a considerable amount of difference of opinion (1),* and it is more especially with regard to the merits and defects of the vaginal tampon (2, 3), of rupture of the membranes, and of version that this difference of opinion exists.

The use of the vaginal tampon alone has never made

* The numbers refer to the paper and author quoted.

much headway in this country, and while rupture of the membranes is no doubt quite sufficient and very successful in slight cases of hæmorrhage, podalic version, either internal or bipolar, is the method of treatment almost universally adopted by English obstetricians in the more severe cases of hæmorrhage from placenta prævia. In employing version we can hardly be said to have as yet attained to an ideal mode of treatment, since this method, while it has reduced the maternal mortality to probably the lowest point attainable, viz. under 5 per cent., cannot be said to have done the same for the fœtal mortality.

The safety of the mother is, of course, of paramount importance, but a mode of treatment which does not in any way tend to lessen the already numerous dangers to the child's life present with this complication, if indeed it does not actually increase them, cannot be said to be a completely ideal mode of treatment. We are justified, then, in considering any method which may diminish the risk to the child, while at the same time it does not increase the risk to the mother, and it is with this object in view that various obstetricians have employed the means of arresting the hæmorrhage under consideration in this paper.

It was in 1888 that Champetier de Ribes (4) first introduced his dilator to the profession, and in his description of the instrument he calls attention to the fact that it might be of use in the treatment of placenta prævia. "I should be disposed," he says, "in a case of placenta prævia with no pains, to rupture the membranes when I was able to reach them, and to place the bag in the amniotic cavity. I am convinced that the bag would form an excellent tampon, fulfilling all the conditions necessary in these grave cases to ensure the best results for the mother and child."

In accordance with this recommendation of Champetier de Ribes, Pinard (5) has been using the bag in grave cases of placenta prævia since 1890, and it is mainly to him that we are so far indebted for the results of the treatment.

In employing a Champetier de Ribes bag in the induction of premature labour, one introduces it through the cervical canal as carefully as possible, so as to avoid rupturing the membranes (6, 6 *a*). In cases of placenta prævia, however, the best method of procedure is that originally recommended by Champetier de Ribes, viz. to rupture the membranes and to introduce the bag into the amniotic cavity. In this way the bag, when filled, pressing the detached portion of placenta directly against the uterine wall, arrests the hæmorrhage by direct pressure upon the bleeding sinuses, at the same time that it dilates the cervix. Not only does it most certainly arrest any hæmorrhage that may be occurring at the time of its introduction, but it also tends to prevent any further occurrence of hæmorrhage during the dilatation of the cervix. As the wedge-shaped bag descends through the cervical canal, a constant pressure is kept up on the lower uterine segment, and any further tendency to hæmorrhage is most efficiently checked. It is best in introducing the bag to allow some of the liquor amnii to escape, so as to lessen the bulk of the uterine contents, and to avoid any undue over-distension of the uterus. If hæmorrhage occur after introduction of the bag it can be at once arrested by traction being made upon the bag, and it is useful to keep up such slight traction in all cases. In hospital practice this may be conveniently carried out by means of a light-weight extension apparatus. Dührssen (7) has especially drawn attention to the advantages of continuous traction, by which the dilatation of the cervix is more rapidly carried out, and the arrest of the hæmorrhage is more certainly attained. In multiparæ, and in the majority of cases in primiparæ, no preliminary dilatation of the cervical canal is necessary. It very rarely happens in a case of placenta prævia that the cervix is not sufficiently patulous to allow of the introduction of the bag, and it can be introduced with ease in every case where the dilatation is sufficient to allow of bipolar podalic version being performed. If the hæmorrhage is sufficiently severe to call for

treatment before the cervix is large enough to admit the bag, it can readily be dilated by a small Barnes bag, or by the dilator specially devised for the purpose.

Care should be taken before introduction to ascertain the exact position of the child; and during the filling of the bag, any displacement of the presenting part that may take place should be carefully watched.

As a rule, within a short time of its introduction the uterine pains become well marked, and speedily expel the bag into the vagina; it can then be emptied and withdrawn, when the cervix will be found to be completely dilated. As the bag is expelled through the cervical canal it is necessary to see that the presenting part follows it closely, so as to avoid any malpresentation. After its expulsion, the child, if it is not born spontaneously, as frequently happens, can be at once extracted by forceps or version.

I have treated five cases of placenta prævia by this method, and have been able to collect the details of seventeen other cases recorded by Pinard (5), Varnier (8), Dührssen (7), and Sequeira (9), making a total of twenty-two fairly fully recorded cases, a number which, although small, will yet enable one to form some idea as to the merits of this mode of treatment, and its possible dangers. Other cases have been recorded of the use of the bag in placenta prævia, but they are not included in the series, either because they are cases in which the bag was used to dilate the cervix without previous rupture of the membranes (10, 11, 12), a method which is not based upon quite the same principle as that in which the membranes are ruptured; or because other means besides the bag, such as the vaginal tampon (2, 7, 13), were used to arrest the hæmorrhage. If the bag be used in cases of placenta prævia without rupture of the membranes, it is impossible to make direct pressure upon the bleeding sinuses without causing further separation of the placenta, and to use it efficiently the membranes should be ruptured, and it should then be introduced into the amniotic cavity.

In only one (No. 3) of the twenty-two cases was this not done, and in this instance the membranes were purposely kept unruptured on account of prolapse of the cord; this case is included in order to illustrate this mode of employment of the bag.

An analysis of the details of the cases recorded in the tables will furnish us with some data upon which to base an opinion as to the advantages of the bag. Of the twenty-two cases, three were primiparæ and nineteen multiparæ, and in all the cases the hæmorrhage was so severe, that if the bag had not been used, some method of treatment further than rupture of the membranes would have been necessary.

The placenta was definitely overlapping the internal os in nine of the cases at the time the first examination was made, in four it was marginal, in eight lateral, while in one there is no note of the exact position of the placenta, but there was abundant hæmorrhage in this case during the dilatation of the cervix. In nineteen of the cases the vertex presented, in two the shoulder, and in one the breech.

In all the cases, with the exception of the one already alluded to, the membranes were ruptured and the bag placed inside the amniotic cavity: in three they ruptured spontaneously: in the remaining eighteen they were artificially ruptured as a preliminary step in the operation of introducing the bag.

In none of the cases was dilatation of the cervix required, nor was any difficulty experienced in introducing the bag, an anæsthetic being employed in only two cases. This corresponds to the experience of Smyly (14), who in fifty cases of placenta prævia did not meet with a single case in which the cervix would not admit two fingers readily, and who expresses the opinion that such a case would be a very rare occurrence. Even in the induction of premature labour by the bag, any preliminary dilatation of the cervix is as a rule quite unnecessary. In my own cases, careful observations were made of the amount of

displacement of the presenting part caused by the bag, and in five of the other cases this was also noted. Of these ten cases, in two no appreciable alteration was found; one of these was a vertex presentation, the other a breech. In three the flexed head was pushed upwards directly in the middle line, in four it was deflected to the left iliac fossa, and in one upwards and to the right.

That the bag is a very powerful stimulant of uterine action has been abundantly proved by its use in the induction of premature labour (15); in the treatment of placenta prævia this is a quality of great importance. Out of seventeen of the cases in which the effect upon the pains is noted, in sixteen they were definitely increased after the introduction of the bag, in one no alteration was perceived. In my own cases the longest time that elapsed after the bag had been introduced before the occurrence of a well-marked pain was two hours, the shortest time five minutes.

That the bag also acts very efficiently in arresting the hæmorrhage will be seen from the fact that after its introduction no further hæmorrhage occurred in nineteen out of twenty of the cases in which special mention is made of this point. In the remaining case, some thirteen hours after the bag was introduced the hæmorrhage recurred; on examination it was found that the bag was not pressing against the lower uterine segment, fifty grammes of fluid were accordingly let out, with the result that the bag descended into the cervical canal to a greater extent than before, and no further hæmorrhage took place. The length of time that elapses between the introduction of the bag and its expulsion by the uterine contractions compares very favourably with the duration of labour after version in these cases. The longest time recorded in the tables is twenty hours, and the shortest ten minutes; the average time required for the complete dilatation of the cervix being five hours and ten minutes. After the expulsion of the bag the delivery of the child is usually an easy matter, as the cervix being fully dilated any

method is available. Of the twenty-two children, nine were born spontaneously, nine were delivered by version, one by forceps, one by traction on breech, one by decapitation, and one by basiotripsy; in both the latter cases the child was diagnosed to be dead, and these methods were adopted in preference to version.

No very definite conclusion can be drawn from the observations made as to the effect of the use of the bag upon the fœtus. Of the eight children born dead, in one there is no note as to the heart-sounds, in three they were not heard, in two they were faint at the time of introduction, in one fair and 140 per minute, and in one weak three and a half hours after the introduction of the bag.

Of the fourteen children born alive, in five there is no information as to the heart-sounds, in four they were normal, in two they were heard but there is no note as to their quality or rate; while of the remaining three, in two they fell from 150 to 120 and from 168 to 126 respectively, shortly after the bag was put in, and in the last case they remained at about the same rate, viz. 136 to 140. Further observations are necessary before any conclusion can be come to as to whether the fœtal heart-sounds are affected or not, but at any rate in the cases in the table the effect would appear to have been slight.

In one of my own cases there was a good deal of œdema and hæmorrhage over the left parietal bone; it was thought at the time that this might have been due to the bag, but it is unlikely. In one of Dührssen's cases, too, the right parietal bone was distinctly flattened; this he attributed to pressure exerted upon the part by the distended bag. In both these cases the children were born alive. These are the only cases in which there were any signs of injury to the child possibly caused by the bag.

In two of the cases post-partum hæmorrhage occurred; of these one was treated by hot douches, and subsequently by intra-uterine plugging with iodoform gauze; and the other, which occurred in a case of uterus septus, was

also treated by plugging. In both cases the patients made a perfect recovery.

In trying to estimate the value of any method of treating placenta prævia, the point of greatest importance is the result as regards the maternal mortality, since it is obvious that any method which tends to increase the mother's risk, even if it diminish that of the child, is inadmissible.

Of the 22 mothers, one (Case No. 6) died of septicæmia, proved by bacteriological examination to be present. The case was, however, by no means a simple one, complicated as it was by the presence of fibroid tumours, and hardly suitable, one would think, for the employment of the method. The patient on admission to the hospital had a temperature of 102·8°, which rose two hours after admission to 103·2°, the case ending fatally twenty-seven hours after delivery. The bag was introduced nine hours after the rupture of the membranes, which had occurred before admission, and labour was completed three hours after this. There can be very little doubt but that the patient was suffering from septicæmia at the time of her admission, and that the use of the bag played no part, or a very small part, in causing the fatal result. At the necropsy the uterus was found to be the seat of several fibroids, which had been diagnosed as present during life. If this case be considered as a death due to the method of treatment, the rate of maternal mortality amounts to 4·5 per cent.; but if this case be excluded, as may quite fairly be done, seeing that the bag was certainly not the cause of the septicæmia, the maternal mortality is *nil*.

Of the remaining 21 cases, in five there was a slight elevation of temperature during the puerperal period, the highest point reached in any of the five being 100·6°. In two of the cases the highest temperature was 100·4°, and in two 100·6°, while in the remaining case the actual reading is not given, but there is said to have been a slight rise of temperature. In the remaining sixteen recovery was perfect and the puerperium afebrile.

Of the 22 children, 14 were born alive, and 8 dead; of the 14 born alive 4 subsequently died, 1 twelve hours, 1 twenty-four hours, 1 twenty-six hours, and 1 four days after birth.

The fœtal mortality, counting the children born alive, is 36·3 per cent., or if the children who subsequently died be included, it is 54·5 per cent. Of the children born dead, two were full term and six premature, while two of the eight were almost certainly dead at the time the bag was introduced.

The question as to what share in the deaths is to be attributed to the use of the bag, and what to the position of the placenta, is one which it is impossible to answer; but at any rate in the two cases where the children were already dead, the bag was not a cause, so that we are left with six deaths out of 22 cases in which the method of treatment may have had something to do with causing the fatal result. Any attempt, however, at such an analysis of the different causes of the deaths is futile, and we must content ourselves with the fact that eight children were born dead out of twenty-two, a death-rate to be compared with that occurring after the employment of version, which at the lowest computation is from 45 to 75 per cent.

We are now in a position to consider the advantages claimed for this mode of treatment; they are as follows:

1. The facility with which the bag can be introduced. Bipolar podalic version requires a certain amount of skill and dexterity to carry out successfully, it usually entails an anæsthetic, and is a more difficult and less certain operation than the introduction of a Champetier de Ribes bag. The use of the bag does not, like internal version, call for the introduction of the hand into the uterus, and it is with internal version rather than with bipolar that this method must be compared, as without doubt the majority of cases of placenta prævia are treated by internal version.

2. The certain arrest of the hæmorrhage.

3. That any further tendency to hæmorrhage can be at once controlled by traction upon the bag, and that this traction can be made, and kept up for any length of time, without increased risk to the child's life.

4. The diminished risk to the child consequent upon the fact that the bag and not the child's body dilates the cervix.

5. The ease with which delivery can be at once effected after expulsion of the bag.

6. The fact that the bag acts as a very powerful stimulus to uterine contractions, a stimulus the force of which can be increased by the employment of traction.

7. The lessened fœtal mortality.

The fœtal mortality in cases of placenta prævia, treated by version, varies from 45 per cent. to as much as 90 per cent., and there is no doubt that the general employment of version has increased the death-rate amongst the children. It is to be noted that the statistics commonly quoted refer to children born alive, not to children surviving. In 173 cases collected by Hofmeier (16), Behm (17), and Lomer (18), the death-rate varied from 50 to 80 per cent., the average being 65 per cent., and this no doubt represents the ordinary proportion of children born dead, since Wyder (19) found in 189 cases treated by version, a precisely similar death-rate, viz. 65 per cent. That a much smaller proportion actually survive has been shown by Behm (17), who found that of 78 children born alive, only 29 lived, representing an ultimate death-rate of 78 per cent.

Of the 22 children in the tables, 14, or 36·3 per cent., were born alive, but only 10, or 54·5 per cent., were alive on the tenth day after delivery.

The objections that have been brought forward to the use of Champetier de Ribes' bag are mainly three in number (20); the danger of septic infection, the risk of rupture of the uterus, and the displacement of the presenting part caused by its introduction.

Besides these so-called dangers, it has been objected

that the bag is difficult to introduce, and requires preliminary dilatation of the cervix, that it is useless in cases of central placenta prævia, and that it requires a special apparatus (21).

The risk of septic infection is especially laid stress on by the opponents of the bag, since they say that decomposing blood-clot is likely to be pent up at considerable pressure between the bag and the lower uterine segment, and dangerous absorption is likely to take place. That there is some danger of septic infection is undoubtedly the case, but if ordinary care be taken, and especially if, as should always be done, a copious douche is given beforehand, so as to wash away any accumulation of blood-clot that may be present in the vagina, the danger is but a slight one; and the fact that in none of the collected cases, with the exception of the one that died, did the temperature rise above 100·6°, tends to show that this is the case. One would not, of course, select a septic case in which to use the bag, and with the observance of the precautions which anyone dealing with a case of placenta prævia would adopt, there should be no increased danger of sepsis.

When Champetier de Ribes' bag was first used for the induction of labour, the danger of its causing rupture of the uterus was brought forward as a strong argument against its use (20). Up to the present time this danger would appear to have remained entirely a theoretical one; I have been unable to find any record of such an accident occurring. In using the bag after first rupturing the membranes, the danger of such an occurrence is minimised, since the increase in the intra-uterine pressure is not so great as when the membranes are intact. The bag must of course be filled with fluid slowly and carefully, and if a uterine contraction occur during the process it should be stopped until the contraction has passed off. Displacement of the presenting part is not of such great importance in cases of placenta prævia as in the induction of premature labour. This is an accident that can be

prevented if care be taken to notice the displacement, if there be any, when the bag is introduced, and if this be rectified as the bag is expelled through the cervix; even if it be impossible to do this before the expulsion of the bag, version can be performed with great ease and rapidity after its expulsion, owing to the complete dilatation of the cervix that is present.

The objection that the cervix requires preliminary dilatation, and that the bag is difficult to introduce, is of no value. The bag is usually easy to introduce in cases of placenta prævia, and, as has already been shown, dilatation of the cervix is not as a rule necessary.

Even in a case of central placenta prævia, after perforation of the placenta the bag could be introduced quite readily through the perforation, and so used to dilate the cervix and to arrest the hæmorrhage, which it would do quite as effectually as the half breech; while if it were possible to reach the edge of the placenta, it could be introduced after rupture of the membranes in the ordinary way.

The objection that a special bag and forceps are necessary is, of course, a valid one, but an objection which cannot be allowed to weigh for a moment if by the use of such an apparatus the fœtal mortality can be in any way diminished, without at the same time increasing the risk to the mother.

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20. Discussion on Herman's and Spencer's papers, 'British Medical Journal,' January 7th, 1893.

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Dr. HERMAN agreed with Dr. Blacker's practical and useful paper. He thought the bag was a better plug than the half-breech, because it pressed on the whole circumference of the lower uterine segment, which the half-breech did not. Bringing down a foot exposed the child to the risk of pressure on the cord; the bag avoided this. The hæmorrhage in placenta prævia was produced by dilatation of the cervix; hence the bag could always be introduced when considerable hæmorrhage had occurred. There was a certain unavoidable mortality among the children in placenta prævia, because so many of these labours were premature. Bearing this in mind, he thought the results as shown by Dr. Blacker were very good. His own experience of the use of Champetier's bag in placenta prævia was altogether favourable.

Dr. PETER HORROCKS said that in the lying-in charity at Guy's Hospital and in private practice he had for some years used de Ribes' bag not only in cases of placenta prævia, but also in all cases where formerly Barnes's hydrostatic dilators had been used, because it was found possible to insert this bag as easily as the smallest sized Barnes's bag. In cases of placenta prævia the bag had been placed in the amniotic cavity only when the membranes had been ruptured. In cases where they had been intact care had been taken not to rupture them; the prævial portion of the placenta had been detached by sweeping the finger round the lower zone, and then the bag had been passed into the uterus so as to tie below the membranes. Good results had been obtained by this method, which had much to be said in its favour. In so-called accidental hæmorrhage one ruptured the membranes because it was the quickest method known of securing uterine contraction, which stopped the hæmorrhage; whereas in hæmorrhage from placenta prævia, or so-called unavoidable hæmorrhage, the principles of treatment were precisely the reverse; that is, instead of invoking uterine action one tried to avoid it, and to dilate up and deliver by artificial means; and only when the cervix was sufficiently

g	Effect of bag on			d	Remarks.
	Presenting part.	Hæmorrhage while *in situ*.	Pains.		
ds s. l	Head in left iliac fossa	Completely arrested	Became well marked	S	—
	?	None	Well marked ¾ hr. after bag introduced	S	—
ds	Head pushed up in middle line	None	?	I	—
ds	Head pushed up to right; on expulsion of bag head, forearm, and hand presented	None	Well marked after bag put in	S nec h arr	—
	?	None	Very violent after bag put in	I	—
ls rd	? Cord prolapsed	None	Frequent, soon after bag introduced	necropsy was found to be the ibroids, the mucous membrane y thickened and of reddish- e. Bacteriological examination icæmia was the cause of death. he patient had a temperature nds to show that the bag was cause of the septic infection.	
ds l	?	None	?	Bission.	
n	?	None	?	ion of uterus for 44 hours. before admission to hospital.	

of bag d.	Effect of bag on Presenting part.	Hæmorrhage while *in situ*.	Pains.	Remarks.
	?	None	?	—
nds	?	None	Well marked after introduction	—
	?	?	Frequent and energetic after bag introduced	—
	?	None	?	—
nds, to to ain ; hrs. tro-	?	?	8 hrs. after introduction pains feeble, 10 grs. fluid let out. 10 hrs. after introduction 100 grs. withdrawn, pains now became frequent	—
nds, hen tro- hrs.	None	Some, 13 hrs. after bag introduced 50 grs. fluid let out; after this none	Pains marked	—
	?	None	Strong after bag introduced	—

ı of bag ed.	Effect of bag on: Presenting part.	Hæmorrhage while *in situ*.	Pains.	Remarks.
ınds, 26	Head displaced upwards	None	Not mu increas by ba	in uterus. Utero-vaginal canal iodoform gauze. Uterus re- Child showed some flattening of l bone, ? due to bag, and good ing of eyelids and mouth.
	?	None	Came 12 hr after b introdu	died from placenta prævia.
ınds 10	Head flexed in left iliac fossa	None	Increas first w marke 30 mi after b introdu	mount of time expended in o replace cord after bag came ubt delay caused death of child.
ınds rd	Head displaced upwards	None	Increas first mar pain 10 mi after b introdu	dead when bag inserted.
0; fter in	Head displaced to to left iliac fossa	None	Becam well marke first 5 n after b introdu	—
ınds 20	Head displaced left iliac fossa and right shoulder presented, dorso-anterior	None	First w marke 1 hr. 15 mi after b introdu	rtially inflated. No cerebral but good deal of œdema and on left parietal bone. Some ft forearm and left foot. Pla- tosa.
ınds	Not altered appreciably	None	Well marke 2 hrs after b put i	—

dilated did one rupture the membranes. The ideal treatment in a case of placenta prævia was to dilate artificially without rupturing the membranes, and then to correct any displacement by performing cephalic version, rupturing the membranes, and applying the forceps. This gave the best chances to both mother and child. No method for dilating the cervix yet invented was equal to the natural one. Nature's method was intermittent and gradually increasing in force, whilst hydrostatic and other dilators were constantly in action, and were constantly diminishing. This could be remedied to some degree by occasionally letting out more or less of the liquid from the bag whilst still *in situ*, and then refilling to a greater extent than before. He considered the chief danger was sepsis from the bag itself, which was difficult to get aseptic owing to its composition of india rubber and the stuff used by the instrument maker to make it waterproof. The best way was to thoroughly scrub it all over with a nail-brush and soap and water, and then to place it in a solution of carbolic acid.

Dr. Herbert Spencer said he had had a considerable experience of placenta prævia (over forty cases) and of the employment of Champetier de Ribes' bag, though he had not employed the bag in the treatment of placenta prævia, but usually for the induction of premature labour. That experience led him to agree with most of the conclusions of the author; but he thought that some further considerations should be taken into account in order that discredit might not be brought upon this method of treatment by its adoption in unsuitable cases. It was to be observed that the author, in order to get the pure result of treatment by the bag introduced into the amniotic cavity (except in Case 3), had excluded cases in which preliminary treatment had been carried out. This excluded cases in which the tampon had been employed to check hæmorrhage, and also those grave cases in which the os was not dilated sufficiently to admit the finger. He (Dr. Spencer) had had to use a small sponge tent in a case of complete placenta prævia before a finger could be passed into the cervical canal. In cases of complete placenta prævia he doubted whether it was advisable to use the bag unless an edge of the placenta could be separated, for the child in these cases almost always died, and it would generally be impossible so to control the bag during its introduction as to be sure that it did not push up the placenta instead of passing into the amnion, and that the hæmorrhage which it was intended to check was not increased by the treatment. Dr. Spencer called attention to the paper of Dr. Camille Juge, which had appeared since the author's paper was written, in which an account was given of nine cases treated by Champetier de Ribes' bag introduced into the amniotic cavity. Of these nine cases three mothers died and six children

were born dead (the later result not being given). These cases added to those in the author's table gave a maternal mortality of 13 per cent., and a fœtal mortality of at least 58 per cent. The bag often caused a great deal of pain, and in those of Juge's cases it produced syncope, a very grave condition in cases of this nature. It also often took a long time to induce labour—as long as twenty hours in two of the cases in the table,—whereas he (Dr. Spencer) found that after version the labour was over in sixteen out of seventeen cases in three hours, and in the seventeenth case within five hours. This prolongation of the labour by the bag might act very deleteriously in a patient who had suffered severely from hæmorrhage, and would militate against the adoption of the sound rule never to leave a patient in labour with placenta prævia until the child was born. It was also noticeable that after the expulsion of the bag version was required in nine cases. This second operation might have serious consequences in a patient much exhausted by hæmorrhage. He thought that these considerations should be borne in mind when estimating the value of this method of treatment; but he highly appreciated Dr. Blacker's paper, and agreed with his contention thst the fœtal mortality was less with the treatment by Champetier de Ribes' bag than by version. He was, however, doubtful for the reasons stated whether the bag did not involve some increased risk to the mother when it was used in the graver cases.

Dr. Blacker, in reply, said that he was indebted to Dr. Herman not only for the remarks he had made about his paper, but also for the fact that it was mainly on his recommendation that he had first employed this mode of treatment in placenta prævia. He thought introduction of the bag after rupture of the membranes was certainly superior to its introduction before rupture, as the latter method was almost certain to be accompanied by an unnecessary and avoidable amount of hæmorrhage, a matter of great importance in grave cases. The intermittent dilatation of the cervix produced by uterine contractions could be imitated by exciting intermittent tractions upon the bag. The bag itself was certainly a source of danger of septic infection, and it required very careful cleaning with soap and water and a nail-brush, and then soaking for some time in a 1 to 20 solution of carbolic acid. The bag had been employed in central placenta prævia, and had most efficiently arrested the hæmorrhage in such cases, although the patient's life had not always been saved. The length of time required to complete labour was, no doubt, longer than after the employment of version, but so long as no bleeding was going on the increased length of time could hardly have much effect in increasing the risk to the mother. The pain of the dilatation was, no doubt, in some cases severe, but could be easily con-

trolled by morphia, while the occurrence of syncope recorded in some of the cases was probably due rather to the excessive hæmorrhage than to the use of the bag, seeing that in cases of premature labour induced by the bag such syncopal attacks were practically unknown. If the nine cases recorded by Juge and alluded to by Dr. Spencer were added to those in the paper, it would be seen that of the thirty-one cases four, or 12·9 per cent. of the mothers died; and fifteen, or 48·3 per cent. of the children, a much less fatal mortality than occurred after version. In all the three fatal cases recorded by Juge the bag completely arrested the hæmorrhage, but in two the patients died from the effects of the previous hæmorrhages, one of these being a case of complete central placenta prævia proved by post-mortem examination; while in the third the patient died of septicæmia, the bag being introduced two days after the rupture of the membranes. He certainly thought that the bag used with discrimination, and with complete antiseptic precautions, would diminish the fœtal mortality to a marked extent without increasing the risk to the mother.

LIBRARY

MAY 5TH, 1897.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Present—51 Fellows and 5 visitors.

Books were presented by the Society of the New York Hospital and the Boston (U.S.A.) Lying-in Hospital Staff.

Joseph William Williams, L.R.C.P.Lond., was admitted a Fellow of the Society.

The following gentlemen were proposed for election:—John Stewart Boyd, L.R.C.P.Lond.; Richard A. Coles, M.B. & Ch.Aberd.; W. S. Fothergill, M.B., C.M.Edin.; Robert Gordon McKerron, M.B.Aberd.; Arthur Thomas Todd-White, L.R.C.P.Lond.

ACCESSORY ADRENAL BODIES IN THE BROAD LIGAMENTS.

Shown by J. H. TARGETT, M.S., F.R.C.S.

THIS specimen consisted of the pelvic organs of a stillborn fœtus delivered at term. The abdominal viscera, including the kidneys and adrenals, were normal, but the broad ligaments presented a series of small whitish nodules which attracted attention. The pelvic organs were, therefore, removed *en masse* and dissected after hardening.

It was found that the organs themselves were all normal in appearance,—that is to say, bladder, end of ureters, uterus, ovaries, rectum, and vagina. The anterior surface of each broad ligament exhibited several rounded nodules, a little larger than a pin's head, which projected from the front surface, and were hardly visible on the posterior aspect. When carefully examined, it was seen that the nodules in the right broad ligament were arranged in two groups, a row of three closely placed, and a separate mass or group which may have consisted of more than one nodule, but it was not easy to distinguish them. The row of three nodules was placed on the front of the edge of the mesosalpinx, where it forms the infundibulo-pelvic fold, and exactly opposite the outer pole of the right ovary. The second mass or group of nodules was placed a third of an inch farther out on the same fold of peritoneum, and from its position corresponded with the line of the right ovarian vessels in the broad ligament. On the left side there was a large nodule occupying a precisely similar situation upon the front of the left infundibulo-pelvic fold, and in the line of the left ovarian vessels. This nodule was excised for microscopical examination. Four or five smaller and separate nodules projected from the anterior surface of the left mesosalpinx, two of which were more or less pedunculated, and one was in close proximity with the left Fallopian tube. No other nodules were detected in the broad ligaments or along the round ligaments. Microscopic sections were prepared of the entire thickness of the broad ligament, including the nodule above mentioned. These showed that the nodule was situated between the two layers of the broad ligament. It had a thin but dense fibrous capsule, and to this the peritoneum was closely applied, except at what might be called the hilum of the body. In structure it resembled the normal adrenal body in many details, especially when compared with a fœtal adrenal. There was a distinction between the cortex and medulla or central portion of the body,

but the zona fasciculata was not clear, and there was nothing to be distinguished from the medulla as zona reticularis. For two reasons the microscopical examination was unsatisfactory: firstly, because the tissue was not properly fixed in the recent state; and secondly, on account of the fatty change in the cells, particularly those of the centre. In consequence of this change the treatment necessary for embedding in paraffin left very little of the body of the cell. Under a high power, double rows of cells with intervening capillaries could be recognised in the cortex, and these cells had stained more deeply than those of the medulla, apparently because they were less fatty and degenerated. No zona glomerulosa was to be distinguished. The medullary cells were chiefly represented by their large round nuclei, the bodies of the cells being faintly stained, granular, and ill-defined. The nuclei of capillary vessels were abundant in all parts of the section, and at the hilum or edge of the body looking towards the broad ligament two or three vessels of considerable size entered the adrenal. In the adjacent tissue of the broad ligament there were the usual large vessels, and among them were noted two small separate masses of adrenal tissue, the structure of which was ill-developed and the cells very fatty.

Mr. Targett called attention to the occurrence of accessory adrenal bodies in the following situations:— The cellular tissue around the kidney and adrenal body, beneath the capsule and in the substance of the kidney and liver, along the spermatic and ovarian vessels, in the spermatic cord, and in the testis. Prof. Marchand first described specimens of accessory adrenals in the broad ligament. In his paper ('Virchow's Archiv,' 1883, Bd. xcii, S. 11) he gave details of three autopsies on infants under six months of age, in whom adrenal bodies precisely similar to those above described were found in the broad ligaments; and Figs. 1 and 2 illustrating his paper exactly represented the condition of the preparation now exhibited. Mr. Targett then reviewed the evidence upon

which the belief was founded that such adrenal "rests" formed the starting-point of certain tumours of the kidney, as first propounded by Prof. Grawitz ('Virchow's Archiv,' Bd. xciii, S. 39). A case of this nature he had recorded in 'Trans. Path. Soc.,' vol. xlvii, p. 122, and the microscopic structure of the tumour in the kidney corresponded with remarkable exactitude to that of a secondary deposit in the lung in a similar case mentioned in 'Ziegler's Beiträge,' 1895, Bd. xviii, S. 589. The occurrence of such adrenal growths in the kidney having been established beyond all reasonable doubt, it was natural to inquire whether adrenal "rests" might not serve occasionally as the source of tumours in the broad ligaments, testis, and the other regions already indicated. It had been shown clinically that primary adrenal tumours in children were liable to be attended with hypertrichosis, a cretinoid state of development, and sexual precocity. Further observations were needed to show whether aberrant adrenal tumours presented any clinical symptoms which might be regarded as characteristic.

The paper was illustrated by numerous lantern slides, specimens, and microscopic sections. The specimen is preserved in the Teratological Series of the College of Surgeons Museum.

ON MYOMATA OF THE NECK OF THE UTERUS.

Shown by J. Bland Sutton.

Myomata of the neck of the uterus have not received that amount of attention from writers on the pathology and surgery of the uterus which their importance demands.

These tumours are by no means rare, and, as they sometimes attain large proportions, possess very characteristic features, and often present formidable operative difficulties, require careful consideration.

A myoma may arise in the neck of the uterus and occupy the cervical canal; this is called an *intra-cervical myoma*: or it may project into the mesometrium and not interfere with the cervical canal; such a tumour may conveniently be called a *subserous cervical myoma*. The two varieties differ in some important particulars.

Intra-cervical myoma.—A typical example is shown in Fig. 1. It is oval in shape, and the uterus is perched like a hillock on its summit. The tumour weighed five kilogrammes; the fundus of the uterus was on a level with the navel.

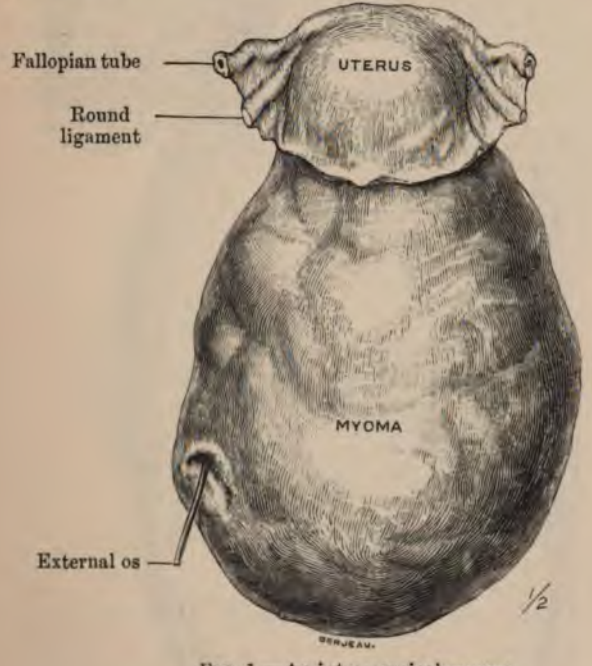


FIG. 1.—An intra-cervical myoma.

The topography of a cervical myoma is more readily displayed when the parts are seen in sagittal section, Fig. 2. It displays a characteristic elliptical outline, and shows the expanded walls of the cervical canal extending like a thin capsule around the myoma. The cervical

canal runs along the periphery of the tumour. Intra-cervical myomata, large and small, are easily enucleated from their true capsules.

Structurally they exhibit the characteristic whorled appearance of uterine myomata, and are microscopically identical.

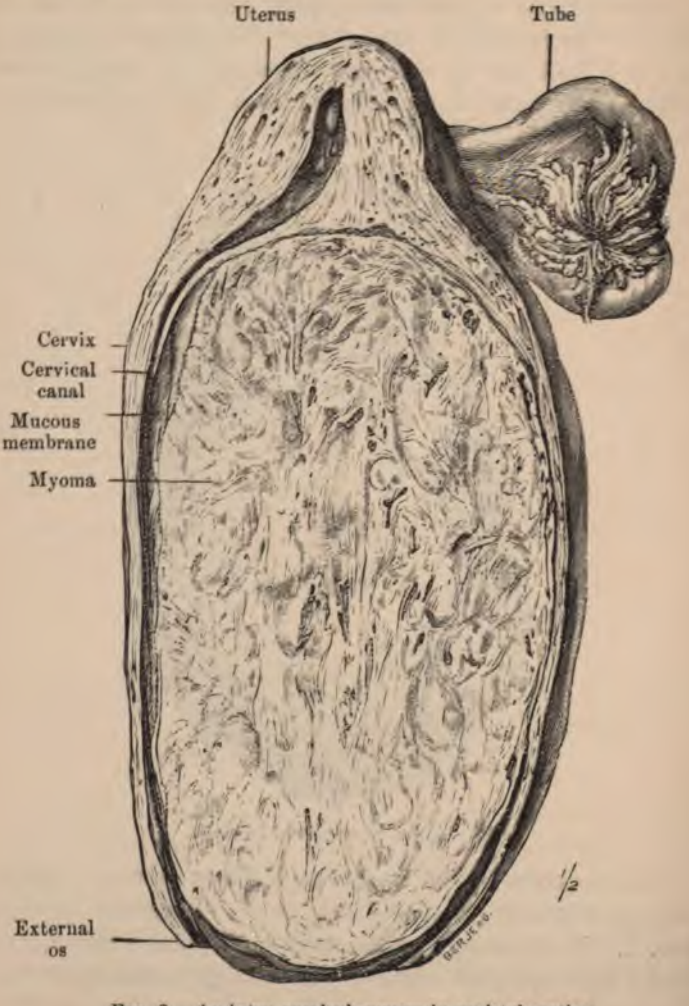


FIG. 2.—An intra-cervical myoma in sagittal section.

Subserous cervical myoma.—Such a tumour may attain large proportions, and will, like an intra-cervical tumour, push the body of the uterus high above the pubes. On section it presents the characteristic elliptical outline. The specimen in Fig. 3 shows this very well; in this instance the patient was thirty-eight years of age, mother of two children. She sought relief for trouble connected with micturition, ignorant of the fact that she had a large uterine tumour.

FIG. 3.—Subserous cervical myoma in sagittal section.

The ovoid shape of a large cervical myoma is not entirely due to the fact that it is moulded by the cervical canal, for one springing from the outer aspect of the cervix assumes the same contour. The shape is really determined by the osseous boundaries of the true pelvis. In an average adult female the pelvic diameters at the

level of the middle of the cervix measure with the soft parts in position about 10 cm. (4 inches); hence a cervical myoma with a transverse diameter of 10 cm. will completely occupy this space, and exert injurious pressure on the urethra and ureters. These points are well illustrated by a specimen preserved in the museum of St. Bartholomew's Hospital, and represented in Figs. 4 and 5.

FIG. 4.—Cystic distension of the vagina and uterus secondary to congenital atresia of the vagina (Museum, St. Bartholomew's Hospital).

It consists of the pelvic organs of an infant with atresia of the vagina. The vagina, cervical canal, and uterus are converted into a cyst. The vaginal and cervical segment of this cyst present the characteristic ovoid shape of a large cervical myoma (in the specimen the lower rounded end of the cyst has been cut away), being moulded by the

bony walls of the true pelvis. In this specimen the ureters and urethra had been compressed, and the effects are well shwon in the drawings, for the ureters are dilated, and the renal pelvis with the infundibula are sacculated.

FIG. 5.—The parts shown in preceding figure, indicating the manner in which the ureter was compressed.

When the infant was brought to the hospital the bladder was over-distended in consequence of pressure exerted on the urethra by the distended vagina.

The specimens described in this communication demonstrate that myomata arising in the neck of the uterus may attain large proportions. Whether they invade the cervical canal or grow from the outer aspect of the cervix, they become moulded by the pelvis, and assume a characteristic ovoid shape, and so accommodate themselves to the true pelvis that they exert injurious pressure on the

ureters, and especially the urethra, causing the patients to seek advice in consequence of troubles connected with micturition.

A cervical myoma large enough to fill the true pelvis is apt to be mistaken clinically for an impacted myoma of the body or the fundus of the uterus.

Mr. ALBAN DORAN noted that a myoma of the cervix often caused pressure symptoms without being impacted in the pelvis. A patient once consulted him for severe dysuria. He detected a large spherical fibroid in the anterior wall of the cervix, growing forwards. In order to draw off the urine it was necessary to pass an olivary rubber bougie, so greatly was the lower part of the bladder distorted. Yet the tumour was perfectly moveable, and might have been twice as large without becoming impacted.

CHRONIC AXIAL ROTATION OF AN OVARIAN CYST GIVING RISE TO EXTREME TWISTING OF THE ELONGATED UTERUS.

By Thomas Wilson, M.D., B.S.Lond., F.R.C.S.Eng.,
assistant obstetric officer, birmingham general hospital.

(Received February 3rd, 1897.)

(*Abstract.*)

The patient was a multipara aged 55, whose abdomen had been gradually increasing in size for four years; for two years there had been frequent attacks of pain and vomiting, many of which were caused by lifting a heavy invalid husband. By operation a tumour was removed after tapping, by tying and dividing a pedicle as thick as the thumb and two inches long. The tumour was a strangulated, multilocular glandular cyst of the left ovary, weighing about five pounds. To the lower part of the cyst was attached the fundus uteri, and the right ovary, tube, and broad ligament, all strangulated. The cyst had a very broad and thick attachment to the left side of the uterus, and the latter organ had been twisted almost through in a direction from right to left. Both tubes were occluded and adherent, the right forming a distinct hydrosalpinx; the left was nine inches long. The patient made an excellent recovery, and has continued well.

Axial rotation is a very important accident in ovarian tumour of all kinds, and usually has as its consequence twisting of the pedicle, which is formed by more or less of the broad ligament. In some rare cases, however, the

pedicle is so short, broad, thick, or strong as to prevent its being twisted. In such circumstances, if the cause tending to axial rotation of the tumour be strong enough, the uterus must be acted upon: generally the uterus as a whole will be twisted in its setting in the pelvic connective tissue; more rarely the organ itself is twisted between the broad strong attachment of the tumour on the one hand, and the attachment of the supra-vaginal cervix to the pelvic connective tissue on the other: of course, both these forms of torsion may co-exist. In the following case the uterus was almost twisted through, at the level of the lower portion of the body, by the axial rotation of a multilocular glandular ovarian cyst.

Mrs. J—, aged 55, was sent to me by my friend Mr. F. Gower Gardner, of Warwick, as a case of ovarian tumour with probable twisting of the pedicle, and was admitted to the General Hospital, Birmingham, on May 15th, 1896. The patient had had five children, the last twenty-two years ago, and one miscarriage: the last labour was a bad one, the child came "doubled up," and the patient was in bed for three weeks afterwards: there was no difference in the periods afterwards, in time, quantity, or pain. The menopause occurred at the age of forty-eight, and there had been no discharge of any kind since then. The abdomen had been gradually increasing in size for four years, and during the last two there have been frequent attacks of pain in the left lower abdomen, sometimes accompanied by vomiting: the pain is said to have been bearing-down in character, and to have lasted for hours at a time. The patient's husband has been a cripple for four years; he is very heavy, and the pain has often come on when the patient has been lifting him. The last attack of pain began about a fortnight before admission, and has continued severe, unfitting the woman for her work.

Mrs. J— is a woman of average height and strong build, fairly nourished generally, but rather thin about the face.

There is no anæmia, and the skin is of a natural colour. The abdomen is prominent anteriorly, and to a less extent the flanks, especially the right, are bulged; a few enlarged veins are present, coursing upwards; there are numerous lineæ albicantes: the umbilicus is unaltered. A tumour, of which the consistence is on the whole soft elastic, but with a harder mass in the right lower portion, is felt rising out of the pelvis and extending upwards to five inches above the umbilicus: laterally it extends further into the right flank. The surface is smooth, and the margin, moderately well defined, is convex upwards. There is no fluctuation wave in any part of the swelling. The area of dulness to percussion corresponds to the area as felt by palpation, but is about one and a half inches less in extent in all directions. The girth at the umbilicus is forty-two inches; from the umbilicus to the anterior superior iliac spine the measurement is one and a quarter inches greater on the right side than on the left. Vaginal examination shows that the cervix is placed high in the pelvis: to the right of it and in front is an irregular firm mass, representing the lower end of the tumour; the sound passes two and a half inches in a direction which runs a little backwards and to the right. The heart-sounds are weak, but clear. The urine acid, specific gravity 1020, contains no sugar or albumen. The temperature was 100° on two evenings in hospital before operation. The diagnosis made was right-sided multilocular ovarian cyst, with chronic rotation of the pedicle and probably adhesions.

On May 19th ether was administered, and a four-inch incision was made through the median line of the abdominal wall, the lower end being about an inch above the pubes: the subcutaneous fat was one and a half inches in thickness. A purplish-black tumour was exposed, united to the anterior abdominal wall by some loose, flaky, fibrinous adhesions. Bloody serum, in quantity estimated at about half a pint, escaped from the peritoneal cavity. Several moderate-sized cavities were tapped with the cyst

trocar, dark claret-coloured fluid, of more or less viscid consistence, escaping from most of them; thinner and darker, almost black fluid from one or two. The tumour was then delivered through the wound, and was found to have a pedicle attached to its lower end about as thick as the thumb, two inches long, running from the right and posterior part of the floor of the pelvis. The fundus uteri was seen to form the lower right part of the tumour, as will be presently described. The pedicle was transfixed and tied with two interlocking silk sutures and divided; the free end of the pedicle then opened out, and showed at its right side a roundish, reddish-brown portion (uterus), about as thick as the little finger, and running from this to the left for about one and a half inches, two layers of peritoneum with very little connective tissue between them—the remains of the left broad ligament. No trace of the right broad ligament could be seen in the pelvis. The pedicle was cut through at a place one and a half inches above the utero-vesical pouch, the limit of the bladder being clearly seen. The tumour, the appendages and broad ligament of the other side, and the fundus uteri, were found to have been removed in one place by snipping through the pedicle. The portion of uterus left behind was easily felt through the vaginal walls, and was about the size of the end joint of the thumb. The peritoneum on the anterior wall of the abdomen was greatly thickened, inextensible, darkly discoloured with blood, and presented a smooth, but dull, matt surface.

The peritoneal cavity was now sponged out, the abdominal wound closed with deep silk sutures, and dressings applied.

The patient made a smooth recovery, and left the hospital on June 8th.

Description of parts removed.—The amount of fluid which escaped from the cyst measured 14 ounces. The solid portion of the tumour removed weighed 4¼ lbs., and

FIG. 1.

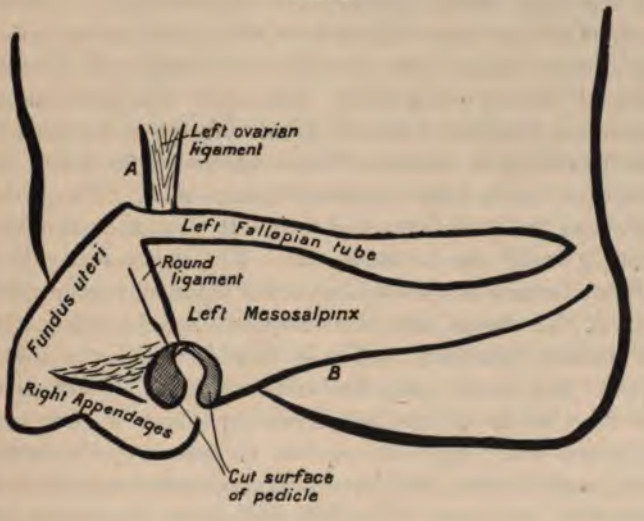
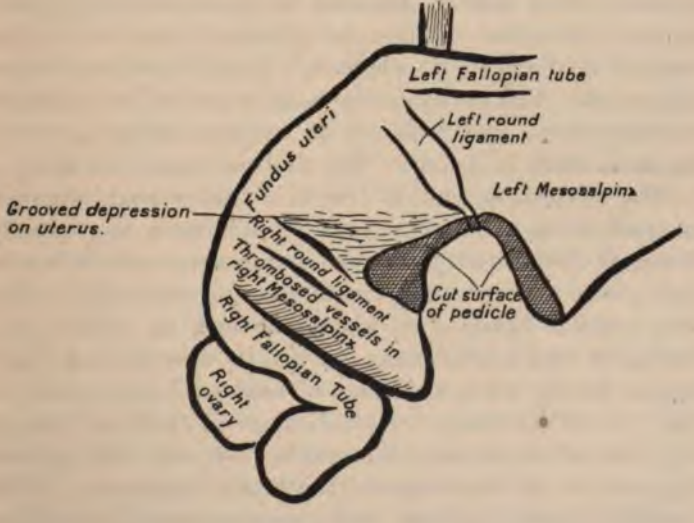

Left ovarian ligament
A
Left Fallopian tube
Round ligament
Fundus uteri
Left Mesosalpinx
B
Right Appendages
Cut surface of pedicle

FIG. 2.


Left Fallopian tube
Left round ligament
Fundus uteri
Left Mesosalpinx
Grooved depression on uterus.
Right round ligament
Thrombosed vessels in right Mesosalpinx
Cut surface of pedicle
Right Fallopian Tube
Right ovary

included a large left multilocular, glandular, ovarian cyst, with the Fallopian tube attached, the fundus of the uterus, and the right broad ligament and appendages. On some portions of the cyst wall and on the posterior surface of the uterus were some shreds and flakes of fibrinous material loosely adherent. The cyst was very deeply congested, purplish black in colour for the most part, but after twenty-four hours in Wickersheimer's fluid, the dark coloration had in large measure disappeared. The pedicle had been twisted from right to left, but the amount of twisting could not be made out. The cut surface of the pedicle consists of the divided lower thinned portion of the body of the uterus, and of an adjacent small portion of the left broad ligament, which is folded round the uterine portion for about half the circumference of the latter. The free border of the left broad ligament is very much thickened and congested; it can be traced to the left for about eight inches, and then becomes opened out on to the surface of the cyst. The left Fallopian tube runs horizontally to the left for nine inches; it is much thickened, one third of an inch in diameter in the inner part, three quarters of an inch in diameter in the outer two or three inches: the outer portion is plastered down on to the surface of the cyst, to which it is fixed by dense fibrous adhesions. The cavity of the tube is patent, and contains no free fluid; the folds of its mucous lining are well marked, black in colour. The fimbriæ cannot be seen.

The left mesosalpinx is free in its inner part, where it is much thickened and congested; externally it gradually becomes obliterated, the cyst having separated its layers, and grown up into contact with the Fallopian tube. The left ovarian ligament is about one inch in length, considerably thickened, runs vertically upwards at right angles to the tube, and then spreads out, and is lost on the cyst of the ovary. At a distance of about an inch to the left of the uterus the width from the left ovarian ligament to the free edge of the broad ligament (*i. e.* the width of the true pedicle of the ovarian cyst) is six inches.

Below its attachment to the cyst, and above the cut surface of the pedicle, the broad ligament is free for an inch or so; it is about half an inch in thickness, having been much increased in size by the intense venous congestion.

The greater part of the body of the uterus has been removed with the cyst, and is black and greatly swollen from venous congestion. The fundus measures five inches from cornu to cornu, and runs almost vertically downwards from the left to the right Fallopian tube. On the anterior surface is a smooth concavity, bounded above by a line running obliquely from the cut surface of the left round ligament to the right cornu. This depression has apparently been caused by the uterus resting on the brim of the pelvis. The upper part of the groove caused by the twist joins the lower part of this depression, and is situated about three inches below the summit of the uterus. On the posterior surface, which is concave, and rests against the cyst, the groove runs across about four inches below the summit of the fundus; the course of the groove is obliquely from the right and above, downwards to the left.

The walls of the uterus are fully one and a quarter inches in thickness, and show on section a black colour and loose texture, very many large sinuses being cut across. The cavity of the uterus is large; it contains no free fluid; the lining membrane is smooth and even. The left round ligament for its first two inches is deeply congested, and one third of an inch in thickness; it runs downward close to the side of the uterus, and forms about a right angle with the Fallopian tube; the swelling and discoloration cease abruptly at the groove of torsion, and its diameter at the cut surface is barely one eighth of an inch. The right round ligament is distinct and congested for about its first inch, and cannot be distinctly traced afterwards. The right tube and ovary, and part of the right broad ligament, are attached to the right side of the uterus, which is the lowest portion of the mass removed: they are applied to the right side of the uterus and to the adjacent portion of the cyst behind it. Between

the right round ligament and the Fallopian tube is a thick, prominent, black swelling, about as long and as thick as the thumb, with rough irregularities on its surface ending inferiorly in a free rounded prominence; this is found to consist chiefly of distended vessels, some of which are thrombosed. The right tube is about four and a half inches long; its ostium is closed, and firm fibrous adhesions bind it to the outer end of the ovary; the tube is somewhat thickened, section showing that this is especially the case with the mucous coat: there is no free fluid in the lumen. The right ovary is not decidedly enlarged; section shows a black general coloration; five or six corpora fibrosa, from one sixth to one twelfth of an inch in diameter, are cut across in the section. The mesosalpinx is free from adhesions in its inner portion; externally the outer end of the tube is firmly adherent to it.

Remarks.—The pathological history of the case is clear. At some time (probably about the time of the last delivery, since pregnancy took place on six occasions up to the time the patient was thirty-three years of age, and then did not recur) there has been a pelvic peritonitis affecting the serous membrane in the neighbourhood of the fimbriated extremities of the tubes, and binding these down to the ovaries and adjacent portions of the broad ligaments. About four years ago a cyst began to grow in the left ovary, and first opened the external part of the mesosalpinx: hypertrophy of the Fallopian tube was caused: the broad ligament proper was not opened up. Then, apparently about two years ago, as the result of lifting heavy weights, the cyst began gradually to rotate in a left-handed screw, from right to left: this turning has gone on for at least one complete turn of 360 degrees, probably more. The attachment to the broad ligament was too broad to allow the pedicle to twist in the ordinary way; it was easier for the left border of the uterus to be pulled round to the left and backwards; the left round ligament resisted, as is shown by its position nearly at right angles to the Fallopian tube. The strain was then

propagated across the body of the uterus to the right cornu, which started to rotate towards the left in advance of the right broad ligament. The isthmus of the Fallopian tube and the inner part of the mesosalpinx, the ovary, and next the ampulla of the tube, followed in the order named. Finally, the right broad ligament has been completely divided transversely in its whole width from the ovario-pelvic ligament to the right side of the uterus, below the level of the mesovarium. This whole sequence of events can be traced on the specimen.

Klob drew attention to the fact that when an ovarian tumour rises into the abdominal cavity it drags the uterus upwards, causes it to become obliquely placed, and often twists it on its long axis. Among fifty-five cases of ovarian tumours of all kinds coming to operation, of which I have notes, the uterus was found elevated in two, and twisted in three more, including the one under consideration. Both the other cases of torsion of the uterus occurred in glandular cysts; the degree of twisting did not exceed 90 degrees, and in each case the pedicle was notably thick and broad. Freund mentions three similar cases.

In the earlier part of the growth of this cyst as an abdominal tumour the uterus seems most probably to have been strongly dragged upwards, while at the same time its fundus would be pushed over to the right side of the pelvis. The dragging upwards may have led, as has been observed in cases where a strong upward pull has been exerted by fibroid tumours of the uterus, to some degree of atrophy of the cervix and lower part of the body of the uterus. This elevation and possible thinning would greatly facilitate the twisting of the uterus by the cyst. The torsion has taken place in the lower part of the body of the uterus, above the reflection of the peritoneum on the bladder, which may be taken as the level of the internal os. This lowest part of the body has also been thinned and considerably elongated: whether this is a consequence of the twisting, or, as above suggested, was one of the

favouring conditions present before the twisting began, cannot be definitely settled now. An analogous thinning due to the stretching of a portion of the uterus, is observed in some cases of prolapse with hypertrophy of the cervix. In these cases the supra-vaginal cervix gets thinned and elongated between the pull on the vaginal attachment at one end, and the structures which support the uterus about the level of the internal os on the other. In the present case the cavity of the uterus must have measured five inches (estimated). The left Fallopian tube is also considerably elongated as the result of tension; it is, however, certainly not thinned, but, even apart from the congestive swelling, apparently somewhat thickened. The hypertrophy with elongation in the case of the tube is probably due to long-continued congestion associated with tension; the atrophy with elongation of the uterus to tension co-existing with anæmia.

I have been unable to find any previous reference to such an extreme amount of twisting of the uterus as occurred in the present case, caused by the rotation of an ovarian cyst, but in fibro-myoma several examples have been described (Virchow, Küster, Times); in some cases the uterine body has been completely separated from the cervix, and the canal obliterated. Küstner published a case in which the uterus was twisted by an ovarian tumour through an angle of 180 degrees at the level of the internal os; but in this case the true pedicle of the tumour, the tube and part of the broad ligament, had first been twisted in the usual manner: the torsion of the pedicle and of the uterus were both in the same direction.

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Dr. Peter Horrocks pointed out that in most cases of axial rotation there had been effort or exertion whilst in a bent position. He quoted a case where it occurred suddenly when a lady was pulling on a boot which was rather tight. He thought that great force must be exerted upon a tumour in the direction of axial rotation when effort was made in a bent position of the body. He asked whether the blood-supply was entirely cut off, or whether there was some slight vitality, and also if cultivations had been made of the cyst contents.

Mr. Alban Doran was surprised to hear that in Dr. Wilson's three cases where the uterus was involved in the rotation the cyst was of the multilocular glandular type. In twisting of the pedicle alone the tumour was dermoid in a considerable proportion of cases. Much remained to be learnt about axial rotation. Mr. Doran had operated on patients where all the clinical symptoms pointed to twisted pedicle, yet nothing was found except soft parietal, and perhaps omental adhesions. He had found the pedicle short and slightly twisted in cases where the patient had nothing to complain of except the presence of an abdominal tumour. On the other hand, he had found a long pedicle, moderately twisted, in cases where there were typical symptoms, including severe pain.

A SECOND* CASE OF "ABDOMINAL" PREGNANCY SUCCESSFULLY TREATED BY REMOVAL OF CHILD AND PLACENTA THREE MONTHS AFTER DEATH OF CHILD AT TERM.

By JOHN W. TAYLOR, F.R.C.S.Eng.,
SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.

(Received February 8th, 1897.)

(*Abstract.*)

(1) THE author gives a detailed account of the previous history of the case, and of the condition of the abdomen and pelvis at the time of examination.

(2) A description is given of the operation of abdominal section for removal of the child and placenta; of the relations of the pregnancy and sac to the abdominal viscera; and of the progress of the case to convalescence.

(3) Description of the child and placenta.

(4) The author concludes with a short commentary on the origin, growth, and history of the case.

THIS case was one of extra-uterine pregnancy which had progressed to full term within the abdomen of the mother, protected only by the thin sac of the amnion.

It was accordingly very similar in its anatomical relations to the case reported by me to this Society in

* See 'Obst. Soc. Trans.,' 1891.

1891, and the record of the case may be regarded as a further contribution to the study of so-called "abdominal" or "ventral" pregnancy at term, and the best method of dealing with the placenta in this condition.

M. A. Y—, aged 27, was sent to me by Dr. Clarkson on November 30th, 1896.

She gave the following history. She was married nine years ago, and is the mother of four children, the youngest of whom is now four years old. After this child was weaned she menstruated regularly until one year ago, when (as she believed) she became pregnant, and the "periods" ceased for ten months. She felt exactly as in former pregnancies, but the movements of the child were unusually distinct and painful and observed over a wider area, being felt "high up under her ribs" as well as "low down near the groins."

She engaged Dr. Clarkson to attend her in her confinement some four or five months ago.

From the beginning of the pregnancy the patient was troubled with nausea and vomiting, and on three or four occasions (after about twelve weeks' amenorrhœa) the vomiting was accompanied by slight hæmatemesis. For this reason, and for no acute pain or illness, the patient remained in bed for one week at this period, and was attended by her doctor for "ulceration of the stomach."

At no period during the whole course of the pregnancy was there any acute pain, sudden illness, or fainting. Beyond the general malaise, the vomiting, a dull pain in the upper part of the abdomen when this was at its worst, and, later on, the exceptionally painful movements already described, there was nothing to specially mark the course of pregnancy until the time of expected labour. About fourteen weeks ago the movements of the child, which had already caused her unusual pain, became still more violent, and the patient was obliged to go to bed for a fortnight. At one time she supposed herself to be in labour, and sent for Dr. Clarkson, who told her that she was mistaken, but advised, if the pain

continued, that she should be taken to the Women's Hospital. At the end of this fortnight, after taking some medicine, the pain rather suddenly ceased, and since this date no movements have been felt.

From this time until the patient's admission (twelve weeks) her general health has improved, she has been able to do her housework, and, with the exception of the (continued) enlargement of the abdomen, she has had but little to complain of.

No discharge occurred until seven weeks ago, when some hæmorrhage from the vagina was first noticed. This has continued more or less ever since. Five weeks ago it became excessive, and the "flooding" lasted for two or three days. At this time two pieces of "flesh" came away, which were said to be pieces of an afterbirth.

On examination the patient is seen to be dark and very thin, but of good facial aspect and general appearance. The tongue is clean. Pulse 60, regular. Heart and lung sounds normal. The abdomen is considerably enlarged and contains an irregular tumour, which is easily palpated, and may be roughly divided into three parts. It appears to consist of (1) a globular mass immediately above the symphysis pubis, the centre of which is to the right of the middle line; (2) an elongated portion which occupies the middle and left side of the abdomen, extending to beneath the ribs on this side; and (3) a second globular mass, high up on the right side of the abdomen, apparently fixed in this situation, and inseparable (by percussion) from the liver dulness immediately above it.

In the middle part of the tumour (2), which appears to correspond with the trunk and limbs of a fœtus at full term, one fœtal extremity may be felt beneath the abdominal parietes, but whether this is an arm or leg it is difficult to determine.

The result of auscultation of the abdomen (carried out for me by my colleague Mr. Martin) is negative. On vaginal examination the true pelvis is found to be free

from any tumour; the uterus, which is rather displaced to the left side, is of normal size, and apparently empty of any contents.

The *diagnosis* was made of extra-uterine pregnancy which had progressed to term and was now retained, the fœtus being dead. It was supposed that the head of the fœtus was lying just above the pelvic brim and slightly to the right, that the trunk of the child was occupying the left side of the abdomen, and, if so, that the mass beneath the liver must be the placenta. It was also considered as most probable that the child was lying free in the abdominal cavity.

Operation.—On December 11th, 1896, assisted by my colleagues, Mr. Martin, Mr. Jordan, and Dr. Sturge, I opened the abdomen in the middle line, and found that the peritoneum immediately below the incision was thickened and incorporated with some kind of sac containing a dead, but non-putrid, fœtus.

On opening this the child was found lying in the abdomen, bathed in a small quantity of dark bloody fluid. In this some caseous particles were floating. The head of the child lay uppermost, and formed the globular protuberance which had been noticed near the liver. The intestines were visibly covering the body of the child, and the great omentum, forming in one part a thick fleshy body of considerable thickness, passed across the child to a broad attachment on the upper part of the placenta. The latter was situated at the lower pole of the pregnancy, and covered the pelvis. The parts of the child nearest to the incision were the lower limbs, and after pulling the feet outside, and enlarging the incision to admit of the passage of shoulders and head, the child was thus extracted. The cord was then divided and the child removed.

On looking into the abdomen the peritoneal cavity appeared to be directly open as in an ordinary abdominal section. The coils of intestine, the lower part of the stomach, and the great omentum were all plainly visible,

and separate loops of intestine could be brought out of the incision and examined.

On very close observation it was first noticed by Mr. Martin, and afterwards confirmed by myself and Mr. Jordan, that a very thin transparent pellicle or membrane was reflected over all or nearly all of these viscera, and that notwithstanding the apparent free exposure of the peritoneal cavity there was in all probability a thin filmy transparent sac enclosing the pregnancy, not capable of separation or differentiation from the peritoneum of any viscus over which it was reflected except where passing from one to another—as from one coil of intestine to another, or from intestine to placenta. Only under these circumstances was the membrane visible.

Removal of the placenta.—The placenta was of ordinary size, and covered the pelvic inlet "like the lid of a saucepan" incompletely closed, the edge of the placenta being exposed and free on the left side of the pelvis, but closely applied to the abdominal wall on the right side where the cord was situated. The attachments of the placenta were (1) a thick band or rope of omentum, already described, which was firmly attached to the upper or serous edge of the placenta on the left side; (2) several thin attachments or adhesions of small intestine and cæcum to the same surface—these appeared to be possible of explanation as reflections of the thin sac layer (amnion) from the intestine to the placenta; and (3) the deep pelvic attachments of the under surface of the placenta, which at this stage were hidden from view by the placenta itself.

The band of omentum was ligatured in sections and divided, then the adhesions to bowel were separately tied and cut through. By tilting up the free (left) edge of the placenta it was now possible to discover a broad band of attachment below it in the pelvis. This was seized by a pair of Doyen's elastic forceps and divided. When this had been done a further part became accessible, and it was found possible by gentle manipulation

to secure, either by forceps or ligature, all pelvic attachments before separation, so that the placenta was finally removed without any loss of blood, and therefore with a clear field for deliberate operative work throughout.

Below the placenta, in the pelvic portion of the sac, was found quite a collection of caseous masses (remains of the vernix caseosa), which was cleared out of the pelvis partly by the fingers and partly by a douche of warm water which was used for washing out the abdomen. The main attachments, which had been temporarily clamped by forceps, were found to come from the right broad ligament. These were ligatured in sections beneath the forceps, and the forceps were then removed.

On examination of the pelvis where the placenta had been, it was evident that the same arrangement of "sac" existed here as in the upper abdomen—that is, a fine transparent membrane could be traced throughout, and formed a limiting layer between the usual viscera of the abdomen, pelvis, and placenta on the one hand and the child on the other. On replacing the placenta in position this membrane could be traced below the placenta to the bottom of the pelvis on the right side, it was then reflected over the broad ligament and all its attachments to the under surface of the placenta. From this it could be traced all over the placenta, except where intestine or omentum was adherent to its surface. Two thirds (at least) of the placental margin was free, and this was consequently smooth, glistening, and everywhere covered by the thin membrane of the sac.

Owing to this disposition of the sac within the pelvis the outline of the normal pelvic viscera, the uterus, tubes, and ovaries, was considerably obscured, so much so that it was impossible to say whether the right ovary had been removed with the placenta, or whether it had been left in the pelvis below the reflections of the sac.

The abdomen was closed with silkworm-gut sutures, and a drainage-tube left in the lower angle of the wound.

The after progress of the case was satisfactory and

uneventful, except for some chronic suppuration in the lower part of the wound. This appeared to be kept up by caseous remains which had been imperfectly removed, as on more than one occasion some caseous particles were observed in the discharges. The patient was discharged convalescent on January 25th, 1897.

Description of parts removed.—The child weighs 7 lbs., and is a male fœtus which has undergone full development within the abdomen of the mother. The nails of the fingers extend some distance beyond the finger-tips, and are firm and horny. The testes appear to be within the scrotum, and the hair of the head is abundant, but short. The trunk and limbs are perfectly developed; the head is rather large in proportion to the rest of the body, and is bent or twisted to the right, so that the left (or extended) side of the neck and face appears to be permanently larger than the right, the head being flexed laterally towards the right shoulder. There are no signs of decomposition. Closely applied to the head of the child is a perfect cap of membrane, and between this and the head of the child is a considerable quantity of caseous matter. This is the only part where any membranous covering or sac can be distinguished. The umbilical cord and its fœtal attachment are in every respect normal.

The placenta weighs 3 lbs.; it is thick and fleshy, and of fairly normal consistence. On its upper surface and edge it is marked by (1) the insertion of the cord excentrically placed, (2) by the attachment of a divided thick band of tissue, probably omental, and (3) by several large distended vessels almost unsupported by any tissue, but directly attached to the placental surface or edge. (These appear to be portions of adherent omentum which have been changed into congeries of dilated veins.)

The shape of the placenta is peculiar; the bulk of it is circular, with an excentric cord inserted near one border (the right). Beyond this and separated from it by a deep sulcus is a crescentic mass of placental tissue

attached to the main placenta by its horns and lower surface. On the surface of this crescentic part is a pale red, fringed mucous patch, which appears to be the fimbriated end of a Fallopian tube. No further trace of tubal structure can be made out on microscopic examination, and on section of the mass it appears to consist throughout of placental tissue. The under surface of the placenta is in many parts as smooth and free as its upper surface, but it is marked by a long strip of raw surface running across the placenta, with a bend or angle in its course. This marks the attachment of the placenta to the right broad ligament.

Remarks.—The pregnancy may be regarded as originally one of the right Fallopian tube, which, by gradual erosion or giving way of the upper part of the tube, has passed with unruptured membranes into the abdominal cavity.

The deep sulcus on the upper surface of the placenta probably marks the line of separation in the tube where the ovum escaped upwards into the abdomen. From the spread-out internal surface of the (ruptured) tube the placenta has continued growing, and has so altered or taken up its structure in process of growth as to render little but the fimbriated end recognisable. The placenta has derived its blood-supply from the vessels of the broad ligament and from the great omentum.

The case is remarkable for possessing no history of any tubal rupture (or acute illness corresponding to this) throughout the whole course of the pregnancy.

The conditions and opportunities for observation during the time of operation were unusually good, but, in spite of this, the exact state of the upper pole of the pregnancy and its relation to the abdominal viscera must be determined by circumstantial evidence, as it could not be directly seen from the incision.

From the fact that the head of the child is closely covered by a cap of membrane, between which and the scalp is a copious deposit of caseous material, while below this any evidence of a membranous sac is wanting

(except the tear of separation around the forehead and occiput), it may be concluded, I think, that the upper part of the amniotic sac—the membrane forming the extreme upper pole of the pregnancy—has been removed with the fœtus; and that, so far as this is concerned, the abdominal cavity has been directly opened. Below this, towards the centre of the pregnancy, the sac has become incorporated with the peritoneum, so that no separation could be made between the two, and no indication of the presence of a sac could be seen, except at its reflection from one viscus to another as already described.

At a lower level still—at the "lower pole" of the pregnancy—the sac was considerably thickened, forming, together with the peritoneum at the lower part of the abdominal incision, a membranous wall fully one eighth of an inch in thickness. Even here, however, no definite dissection could be made between "sac" on the one hand and "peritoneum" on the other.

From an operative point of view, the bloodless removal of the placenta was very satisfactory. The engagement and control of the pelvic connections by forceps before separation was the only way of securing this, and the method may be thoroughly recommended in a similar case as the best means of avoiding dangerous hæmorrhage.

Dr. Lea said that in these cases the death of the fœtus was frequently followed by thrombosis in the placental vessels, so that some weeks later the placenta may be detached without serious hæmorrhage. He asked if in this case severe bleeding would have followed rapid separation of the placenta without taking the precaution to secure each bleeding point, since this would necessarily prolong the operation very considerably.

Dr. Heywood Smith asked whether the doctor who first saw the case when labour pains came on had made any examination, as the condition might have been recognised and the child's life saved by an earlier operation.

Mr. Alban Doran thought that Mr. Taylor's case seemed an argument in favour of postponing operation, when ectopic gestation was advanced, till some time after term. The removal or the leaving behind of a nine months' placenta was a more serious matter than the removal of the degenerate structure

which represented it several months later. Operation seemed more urgent at term, however, in a class of cases first distinguished by Freund, where continuous intestinal catarrh denotes the intimate attachment of placenta to intestine. This histological union involved immediate danger from sepsis as well as from hæmorrhage.

Mr. TAYLOR said, in reply, that the attachments of the placenta were very vascular, and that the vessels could be felt pulsating before the forceps were applied. The main point, however, was that as each vascular connection was controlled before separation, the same operation might have been performed at any previous period of the pregnancy, and if the patient had come to the hospital at the time of the supposed labour (as he believed her medical attendant had advised), it might have been quite possible to save the life of the child as well as that of the mother. The collection of caseous masses found below the placenta was at the extreme lower pole of the sac of pregnancy. This reached to the bottom of the pelvis on the right side, and the reflection of the sac could be traced upwards from the floor of the pelvis along the broad ligament to the under surface of the placenta, and it was in this lower pocket of the sac that the caseous masses had accumulated. In reply to Mr. Doran, Mr. Taylor said that he would always prefer to operate at term, and under no circumstances would he purposely wait for the death of the child before opening the abdomen. Mr. Taylor expressed his thanks to the President and to Mr. Bland Sutton for their kind remarks on the importance of the case, and also on his attempt to record it.

JUNE 2ND, 1897.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Present—34 Fellows and 3 visitors.

Books were presented by the Staffs of the Presbyterian Hospital of New York, the Westminster Hospital, Dr. Cullingworth, the American Association of Obstetricians and Gynecologists, and the University Library of Norway.

Harold Jäger, M.B.Lond., was admitted a Fellow of the Society.

The following gentlemen were elected Fellows of the Society:—John Stewart Boyd, L.R.C.P.Lond.; Richard A. Coles, M.B. and Ch.Aberd.; W. E. Fothergill, M.A., B.Sc., M.B., C.M.Edin.; Robert Gordon McKerron, M.B.Aberd.; Arthur Thomas Todd-White, L.R.C.P.Lond.

RUPTURED TUBAL PREGNANCY WITH HÆMATOSALPINX OF OPPOSITE SIDE.

Shown by Dr. LEWERS.

DR. LEWERS showed a ruptured right Fallopian tube from a case of tubal pregnancy (tubal mole), and a hæmatosalpinx of the opposite Fallopian tube.

The points that appeared to be of special interest were—

1. That the right Fallopian tube, which contained a tubal mole the size of a walnut, had ruptured, causing profuse intra-peritoneal hæmorrhage, although the fimbriated end of the tube was patent; and—

2. That the opposite Fallopian tube was dilated, so as to be as large as the other, and contained recent clot (hæmatosalpinx). The fimbriated end of the left tube was closed.

The appendages of both sides were removed by abdominal section, and the patient made a good recovery.

Dr. Lewers also showed under the microscope a section of the mole, in which numerous chorionic villi could be seen. A drawing of this section was also shown.

PARTURITION DURING PARAPLEGIA, WITH CASES.

By Amand Routh, M.D., B.S., M.R.C.P.

(Received January 12th, 1897.)

(*Abstract.*)

A multipara, with complete paraplegia below the level of the sixth dorsal vertebra, was admitted into a surgical ward of Charing Cross Hospital under the author's colleague, Mr. Astley Bloxam, half an hour after the accident which caused the paralysis. She was then nearly seven months pregnant.

For eight days intermittent uterine contractions were absent, and then appeared and became gradually more and more perceptible.

After over two months the patient was transferred to a special ward, and labour came on 261 days after the last menstruation, without the patient feeling any pain. The first stage lasted ten hours, the second two and a quarter hours. The placenta followed, aided by slight "expression," in five minutes.

The patient's only sensation during a "pain" was a "tight feeling" at the epigastrium, giving her an inclination to hold her breath; but this tightness was in no sense painful. As the head was passing the vulva the patient cried out, but this also seemed a reflex act, and was unaccompanied with sensation of pain.

The "pains" were not as well-defined as in a normal case, the intermissions being often absent, as judged by the vaginal touch and the hand on the uterus. In fact, the "pains" rather remitted than intermitted.

Retraction was not good for some hours, but there was no undue hæmorrhage.

Uterine involution and lactation were quite normal.

Death occurred six months later, and full description of the pelvic organs, the fractured spine, and the cord are given.

The views held at different times as regards the physiology of

parturition are discussed, and cases described by Ollivier (1827), Nasse (1835), Benicke (1874), Scanzoni (1848), Paget, and Brachet (1837) are given.

Experiments by Sir James Simpson (1849), von Rohrig (1879), Serres (1824), Langley and Anderson (1895–6), Riemann (1871), Goltz (1874 and 1893), Dembo (1884), and others are briefly summed up.

The evidence afforded by cases of post-mortem parturition is also reviewed.

Finally the secondary questions of conception and lactation during paraplegia are mentioned, and the following views are given as being borne out by the facts stated:

In pregnant women affected with paraplegia, from injury or disease in the *dorsal* region of the cord, labour may commence at the normal period of gestation, and may progress in an approximately normal manner, but without sensation of pain. Involution and lactation are also normal.

It is proved also from both cases and experiments that conception may take place during paraplegia.

Further experiments as well as clinical facts are required before the physiology of parturition can be known, and much will be done when it is discovered with certainty what is the force by which the process of labour is initiated at the end of gestation.

Meanwhile the following views seem to be fairly established:

1. The act of parturition is partly automatic and partly reflex, these actions corresponding in the main to the first and second stages of labour respectively.

2. Direct communication with the brain is not essential to co-ordinate uterine action, though the brain seems to have a controlling influence upon the "pains," helping to make them regular with well-defined intermissions.

3. Direct communication between the uterus and the lumbar enlargement of the cord, through the medium of the sympathetic ganglia between the first and third lumbar, or, as Profs. Langley and Anderson prefer it, "through the medium of the sympathetic chain between the first and third lumbar ganglia," is probably essential to the regular and co-ordinate contraction and retraction of the uterus, as occurs in normal parturition.

4. It seems also probable that the uterus is able automatically to expel its contents, as far as the relaxed part of the genital canal, even when deprived absolutely of spinal influence, spinal reflexes being then necessarily absent. But in the absence of reflex action the entire process of parturition would be irregularly, and probably incompletely performed, as in Sir James Simpson's experiments and Brachet's case.

5. Lactation is not solely due to nervous influence, but partly to chemical changes in the blood, which affect secondarily the mammary glands and other tissues of the body. This chemical change in the blood is not of ovarian origin, but is probably due to the metabolism of the pregnant uterus.

Cases of parturition during complete paraplegia are so rare and so instructive, that I have taken the opportunity of describing a case which was under observation during the two months preceding labour, and also during the puerperium.

Other cases are also alluded to, as well as some experiments made upon animals.

It is remarkable that I can find no cases recorded as having occurred during the last twenty years.

The physiology of parturition and of lactation respectively is partially discussed.

The Author's Case.

Case 1.—C. L—, a married woman aged 22. Has had three full-term deliveries previously, the last eighteen months ago.

She was admitted into Charing Cross Hospital on September 5th, 1896, under the care of my colleague, Mr. F. C. Wallis, who was temporarily in charge of Mr. Astley Bloxam's wards. I am indebted to these gentlemen for the careful notes of her state, and to Mr. Bloxam for permission to make use of them.

Half an hour before admission she had fallen fifteen feet through a trap-door, whilst holding a baby in her arms. Though somewhat collapsed she was conscious.

Temp. 98°, pulse 90. Extravasation over dorsal region of spine, and a hæmatoma over right labium majus. She was over six months pregnant. Her last menstrual period was February 22nd to 28th. There was complete motor paralysis with anæsthesia and analgesia below the distribution of the sixth dorsal nerves. The superficial and deep reflexes were absent.

September 8th.—There was retention of urine, and the bowels had not been opened since admission. Patient felt a girdle of tenderness at the level of the fifth rib. Temp. 100·2°, pulse 112. An enema was given, and was followed by incontinence of fæces. A lateral deformity was now observed at level of fifth dorsal vertebra.

12th.—No fœtal heart-sounds nor movements yet detected, but the house surgeon, Mr. N. S. Bickford, to whom I am greatly indebted for the careful notes at this stage, to-day felt a uterine contraction for the first time, the eighth day. Up to this time the uterus was flaccid and toneless, the result probably of shock.

16th.—The girdle pain has disappeared. Uterine contractions were distinctly felt to-day by Dr. Routh. A bedsore is threatening.

25th.—There is a bad bedsore now, and cystitis.

29th.—The legs are swollen, and the patient is very weak and drowsy. Contact is now felt one inch below xiphoid cartilage; fœtal movements felt by observer for the first time.

October 5th.—Observations are being made by Dr. Pembrey,* Lecturer on Physiology at the Medical School, but must here be omitted in detail, as the case is now being considered from the obstetric point of view. He states that the superficial plantar reflexes are now present.

7th.—There is hypostatic congestion of both lungs, with troublesome cough and expectoration, and the patient is very weak.

* Pembrey (M. S.), "On the Deep and Surface Temperature of the Human Body after Traumatic Section of the Spinal Cord," 'Proceedings of the Physiological Society,' February 13th, 1897.

10th.—Several rigors to-day. Some tonsillitis. Temp. 102·8°, pulse 116.

17th.—Severe headache. Face pinched, and expression anxious. Is continually moaning. Temp. 102°, pulse 120.

19th.—Temperature to-day dropped to 97°, but pulse remains weak, and 140 per minute, and respirations are 44. The cystitis is very troublesome.

24th.—Uterus still flabby, and contractions are rarely and indistinctly felt. The fœtus can be easily moved, but spontaneous movements cannot be felt. Long hair is growing rapidly over the anæsthetic area of the body. She perspires freely over face, chest, and shoulders, but not over the parts of the body affected by the paraplegia.

28th.—Dr. Pembrey (see foot-note on last page) has noted the following superficial and deep temperatures:—Superficial: left breast 33·5° C. (92·3° F.); right leg 32·3° C. (90·3° F.); left leg 30·5° C. (86·9° F.). Deep: mouth 35·5° C. (95·9° F.); axilla 37° C. (98·6° F.).

November 7th.—The patient, being now over eight months pregnant, was removed to a special ward.

10th.—Patient had another attack of pulmonary congestion, with intermitting temperature ranging from 101° to subnormal. Pulse about 116. From this date patient was under the care of Dr. Routh, and was most carefully treated by the obstetric house physician, Mr. Atkinson.

16th.—2.30 p.m. There being some watery discharge from the vagina, Mr. Atkinson examined and found the os uteri the size of a shilling, but could detect no uterine contractions nor bulging of membranes. The cervix was secreting freely.

5 p.m. The os is the size of a florin, and uterine contractions can be felt, with the usual bulging of the membranes. The patient is quite unaware of what is going on, feeling no pain whatever.

8 p.m. Os size of five-shilling piece. Contractions more decided, and consist of short, feeble efforts, with

intervals of only a minute or two, and then a rather sharp and prolonged pain amongst the other weak ones. Discharge now blood-stained. Patient feels no pain nor discomfort.

11.30 p.m. Seen by Dr. Routh. Cervix now fully dilated and relaxed. Membranes bulge freely during uterine contractions, which are now very strong about every five minutes, with short, feeble contractions in between. The head lies in the transverse diameter, with occiput to the right, and slightly posterior. The membranes, which were thick, were ruptured with a probe, and the pains became more defined. The occiput then tended to rotate forwards into second vertex position.

17th.—12.30 a.m. The head is descending well. So far, patient has only once made an effort to hold her breath during a uterine contraction. The pains recur about every two minutes, and last forty-five seconds; they are strong and efficacious. She perspires after each pain as if she had been exerting herself, but is as yet entirely unable to state when a pain is coming. She states, however, that every now and then she feels a "tight feeling" at the epigastrium, although the upper level of the uterus only just reaches the umbilicus. It is found that this "tight feeling" at the epigastrium occurs at the height of a pain, and enables her now to tell us when a pain is present. This "tight feeling" is not painful, but makes it more difficult for her to breathe. She states that during the first stage she could feel fœtal movements in the epigastrium, about four fingers' breadth above the umbilicus, though she has had no surface-contact sensation as low as this. When the cervix is stretched with the fingers the patient feels the "tight feeling" as above, and a uterine contraction is produced.

The following notes are again supplied by Mr. Atkinson.

1.30 a.m. The anterior lip of the cervix, which was coming down in front of the head, was pushed up above

the advancing head, and remained there. Flexion is more marked, and there is some more rotation of the occiput forwards.

2 a.m. The occiput has now rotated forwards. Pains stronger and longer. There are more signs of distress in the patient, who holds her breath involuntarily, and cries out in expiration, but complains of no pain, and, indeed, of nothing except the "tightness" at the epigastrium. This is especially the case as the occiput emerges from under the pubic arch.

2.20 a.m. Child born, and soon breathes vigorously. It is very nearly full term, and weighs 5 lbs. 12½ oz. For some unnoticed reason the child's face rotated during restitution to the mother's right thigh. The placenta was expelled with a slight assistance from expression during a pain five minutes later. The uterus contracted firmly down, but its subsequent relaxation was very marked. Retraction was at first unsatisfactory, but in a few hours the uterus remained firm, and at no time was there any unusual hæmorrhage. Pulse 112.

11 a.m. Respiration is now 19, and much less hampered, and expiration is not abnormally marked as it was a few days ago. Her cough also has ceased. Pulse 104. Dr. Pembrey states that the surface temperature on breast, which before labour was 92·3° F., is now 95°, and on the legs has risen from 86·9° and 90·3° F. to 98°. Temperature in axilla has risen from 98·6° to 99·5°. The legs also are a better colour, and feel warmer to the touch.

12 noon. Pulse 96. Uterus firm, rather larger than when retracted after labour. Lochia normal. Retention of urine; catheter introduced.

2 p.m. Uterus three fingers' breadth below umbilicus. Temp. 96·8° (mouth); pulse 116, but stronger. Perspiring freely. Feels very well.

10 p.m. Patient quite comfortable, and from this time her recovery was natural, except that her nipples became sore on fourth day, but were relieved rapidly by the use of a nipple shield during lactation, and a sulphurous acid

lotion. Her rectal temperature continued subnormal for some days (96·6°). Pulse about 80.

18th.—Plantar reflexes more distinct. She has had involuntary jerking of the legs, causing some dorsal pain.

19th.—Knee-jerks present for first time.

22nd.—Uterus three fingers above pubes. Lochia only slightly blood-stained, and scanty.

26th.—Uterus two fingers above pubes. Milk still plentiful.

December 4th.—The patient is convalescing perfectly from the confinement, and, except for the paraplegia, feels well. Involution is quite normal, the uterus being now, on the sixteenth day, unable to be felt above the pubes.

31st.—There is no improvement of the paraplegia. Lactation is still being performed. The growth of hair over the anæsthetic part of the body is very remarkable.

The patient left the hospital early in January, 1897, in good general health, and with no bedsores, but showing no difference in the paraplegia. Bedsores soon developed, and she was admitted to Holborn Infirmary under the care of Dr. I. C. McLearn. She did not rally, but grew gradually weaker, and died there on May 15th—nearly eight and a half months after the accident which caused the paraplegia, and six months after her parturition.

The following are the results of the autopsy, and examination of the various organs concerned:

Report of Post-mortem Examination of Mrs. L—.

By M. S. Pembrey, M.D.,

LECTURER ON PHYSIOLOGY AT CHARING CROSS HOSPITAL MEDICAL SCHOOL.

Post-mortem made midday, May 17th, 1897, forty-eight hours after death.

The body was greatly emaciated, and there was œdema of both legs. There was a very extensive bedsore involving the whole of the gluteal regions, the muscles being deeply

exposed. There were small bedsores over the heels, over the right internal malleolus, and over the back of the thighs. The spine was curved outwards at the level of the spines of the fourth and fifth dorsal vertebræ.

Lungs.—There were a small quantity of serous fluid in the pleural cavities and two small patches of purulent lymph on the visceral pleura. There were also some slight adhesions, but not of recent date. The lungs were emphysematous at the free anterior borders and apices, but œdematous at the bases. No tubercular lesions were found.

Heart.—The right and left ventricles contained large colourless blood-clots. The muscle of the walls was fatty. No valvular or other lesion was found.

Abdominal cavity.—There was no sign of peritonitis.

The *liver* was fatty, especially at one or two places near the free border. No other abnormality was seen.

The *kidneys* were of normal size, and their capsules could be easily torn off. On section they were found to contain some purulent urine and to be fatty.

The *uterus* was 2 inches in inside length ; in external length 2½ inches. The mucous membrane was congested.

The *ovaries* were tough and shrivelled, and showed no well-marked follicles either on the surface or on section.

Note.—The patient had not menstruated, although she had ceased to suckle her child since February.

The *bladder* contained purulent urine, and the mucous membrane was considerably thickened. The bladder appeared to be dilated towards the orifices of the ureters.

Examination of the Brain and Spinal Cord.

Brain.—No naked-eye abnormality was observed in the dura mater, pia mater, nor brain.

Spinal cord.—Above the fourth dorsal vertebra the membranes showed no signs of congestion or inflammation ; the cord appeared to be replaced by a strand of membranes for a length of about 1½ inches at the level of the fourth

and fifth dorsal vertebræ, and was adherent by its membranes to the laminæ in this situation. Below this point the membranes of the cord were somewhat congested, and in the lower sacral region there were a little pus and purulent pieces of lymph. The pus could be traced along the nerves from the bedsores of the gluteal region.

On section the cord above the fourth dorsal was relatively firm, and showed a distinct darkening of the posterior columns. Below the fifth dorsal vertebra the cord was much softer, and was not easy to cut. Around the cauda equina there was congestion with a small quantity of pus.

Report on Fractured Dorsal Spine.

By William Hunter, M.D., F.R.C.P.,
CURATOR AND PATHOLOGIST AT CHARING CROSS HOSPITAL MEDICAL SCHOOL.

A portion of dorsal spine, from second to seventh vertebræ inclusive, divided into two by a mesial longitudinal incision, showing fracture with marked displacement of the two portions of the spine.

The upper portion consists of three vertebræ, and is displaced forwards, forming an angle of 135° with the lower, in such a way that its lower border touches the anterior superior angle of the vertebra beneath at one point only (Fig. 1).

The lower portion of the spine appears at first sight to consist also of three vertebræ, being united behind at an acute angle with the upper portion by bony callus. On further examination, however, this apparent bony callus turns out to be the body of the fifth dorsal vertebra, which is thus continuous with the upper end of the lower fragment, and is thrust behind the body of the fourth in such a way that at one point the fourth and sixth vertebræ are in contact.

The spine has been broken completely across through the intervertebral disc between the fourth and fifth dorsal; the two broken ends overlap to the extent of one vertebra,

FIG. 1.—Photograph of a half of the middle portion of the dorsal spine. The spinal canal has been opened, and the spinal cord removed. The photograph is one half the natural size, and shows the fractured and dislocated body of the vertebra projecting right across the spinal canal.

and have thus been jammed and permanently fixed, with singularly little formation of bony callus or inflammatory thickening. The bodies of the fourth and fifth vertebræ have united by first intention without sclerosis. The body of the fifth has undergone partial absorption. In the left half of the spine a portion of the intervertebral disc at the upper border of the fifth dorsal can still be seen.

Report on Spinal Cord.

By F. W. Mott, M.D., F.R.S.,

PATHOLOGIST TO LONDON COUNTY ASYLUMS.

Portions of the spinal cord (1) from the seat of the fracture; (2) from the lumbo-sacral enlargement; (3) from the upper dorsal region. After hardening for twenty-four hours in 5 per cent. formalin solution they were transferred to 96 per cent. alcohol, then to absolute alcohol, and finally to xylol. They were afterwards embedded in paraffin, and sections cut in the ribbon. The sections were stuck on cover-glasses with albumen, and the paraffin dissolved out in xylol. After removal of xylol with alcohol the sections were stained by the Weigert iron-hæmatoxylin and Nissl methods.

The following results were obtained by microscopical examination of the sections as prepared.

(1) *At the seat of fracture* the sections could not have been recognised as those of a spinal cord. *The grey matter* is completely disorganised, although here and there the remains of a degenerated nerve-cell may be seen. The white matter is also completely disorganised, and I could nowhere find an axis-cylinder process surrounded by its myelin sheath; the degeneration is apparently complete.

(2) *The lumbo-sacral region.*—The grey matter shows considerable atrophy and degeneration of the large multipolar cells of the anterior horn, especially of the anterior and inner group, but there are a great number of cells apparently normal in appearance. It cannot, therefore, be assumed that the "so-called centre of parturition" in the lumbar enlargement has been destroyed. The white matter shows considerable degeneration in the antero-lateral region, particularly in the situation of the crossed pyramidal tracts.

(3) *The upper dorsal region.*—There is well-marked degeneration in the posterior median column, and in the antero-lateral ascending tracts; there does not appear to be much sclerosis of the direct cerebellar tracts. Three photomicrographs were prepared.

FIG. 2.—Photomicrograph of a section of the spinal cord at the seat of the fracture. The specimen was stained by the Weigert iron method. On the outer side can be seen a portion of the membranes and roots. Magnification, 10 diameters.

(1) Seat of lesion magnified ten times (Fig. 2).

(2) Cells from anterior horn, lumbo-sacral region, fairly normal in appearance, magnified 200 diameters (Fig. 3).

(3) Degenerated cells from anterior horn, lumbo-sacral region. The points indicating degeneration of the pro-

think, be attributed to shock, as in my own case above recorded, for it was there particularly noticed that all uterine contractions ceased for eight days after the accident. The early deaths of these guinea-pigs were due, according to Sir James Simpson, to the fact that section of the spinal cord is followed by retention of urine, which in these animals causes rupture of the bladder.

Clinical experience of cases in labour where syncope or coma is present also disproves this cerebral theory, though every one knows the influence that the brain may exert upon the parturient uterus, both as regards emotion and volition. Thus emotion may entirely arrest uterine contraction for a longer or shorter period; and as regards volition, it is often possible to change irregular pains into regular punctual ones by making the patient steadfastly study the minute hand of the clock; weak pains may be strengthened under the reproach or encouragement of the accoucheur, or under the threat of instruments being used, or of another doctor being sent for. Occasionally also, a patient with strong will-power can "keep back her pains," when asked to do so, without the auxiliary of avoiding "bearing down" or of calling out.

In my case recorded above the pains were noted to be somewhat irregular, coming one after another without a definite pause, and it appeared to the observers as if the uterus was deprived to some extent of control, and was acting tumultuously, with needless vehemence, and with absence of normal intermission; for, notwithstanding that the presentation was an occipito-posterior one, the second stage after rupture of the membranes only lasted two hours and a half.

After 1851 (as we are told by Dr. Watt Black, as editor of Sir James Simpson's Obstetric Works, published in 1871) the opinion was held by such men as Tyler Smith and Marshall Hall that uterine action was a reflex spinal one connected with a reflex spinal centre in the lumbar region of the cord.

Dr. Marshall Hall argued this from Ollivier's and

probably also from Nasse's cases, and my own case is not opposed to it, for in each the lumbar enlargement of the cord was healthy, but was shut off from direct spinal communication with the brain by disease or injury in the dorsal region of the cord.

*Case of Dr. Ollivier** (about 1827).

Case 2.—A young woman aged 22 was seized with complete paraplegia towards the end of her second pregnancy. Labour set in without warning and without any pain. The woman was only made conscious of labour by the emptying of the abdomen and the cries of the child. She died ten days afterwards, and at the autopsy the spinal cord opposite the fourth dorsal vertebra was found compressed by hydatids.

Case of MM. Nasse† (1835).

Case 3.—In this case complete paraplegia had followed a fracture at the level of the third and fourth dorsal vertebræ, notwithstanding which the act of parturition proceeded regularly in its course three days later, and without conscious pain. The child was stillborn, and the mother did not long survive the accident.

Benicke's Case‡ (1874).

Case 4.—Mrs. B—, aged 28. Has had eight children, the last in April, 1874. She aborted in the August following, and then again became pregnant, and at once began to suffer pains in dorsal and lumbar region of spine, due to disease of the bodies of the seventh and adjacent vertebræ with secondary spinal cord mischief.

* 'Traité de la Moelle Épinière,' 2nd edit., 1827, p. 784.

† Friedrich und Hermann Nasse, 'Untersuchungen zur Physiologie u. Pathologie,' Heft 2, Bonn, 1835, S. 268.

‡ Benicke (Fritz), "Complication der Geburt mit Paraplegia und Anästhesie der unteren Körperhälfte," 'Zeitschr. für Geburtshülfe und Gynäkologie,' Band i, p. 28.

By December complete motor and sensory paraplegia supervened as high as the umbilicus. Reflexes were, however, well marked.

On June 3rd the patient felt "slightly pressing pains" in abdomen, which she attributed to constipation, and next morning was suddenly surprised by hearing the cry of a fine female child. The afterbirth was removed by expression half an hour afterwards. This also she did not feel. The uterus contracted well, without unusual hæmorrhage, and the puerperium was uneventful. She subsequently went home, and was lost sight of.

If proof were needed that the uterus is supplied from lumbar nerves, it can be shown (von Röhrig*) that asphyxia, which produces uterine contraction, and abortion if pregnancy exist, will do so if the cord is cut across in the dorsal region, but not if the lumbar spinal cord is destroyed. Strychnia as well as ergotin and other ecbolics which cause uterine contraction will not do so if the cord is destroyed in the lumbar region.

Experiments by Serres† (1824), on rabbits, guinea-pigs, &c., showed that irritation of the spinal marrow in the lumbar region excited uterine action, and abortion followed.

Langley and Anderson‡ (1896) have shown that stimulation of the nerves from the third, fourth, fifth, and sixth lumbar sympathetic ganglia in cats and rabbits causes pallor and contraction of the uterus, but that stimulation above the third or below the sixth lumbar ganglia produces no such effect either on uterus or vagina.

No efferent fibres pass from the sacral nerves to the uterus or vagina.

Every-day experience enables us to clinically verify the influence of the spinal cord in producing reflex stimu-

* "Experimentelle Untersuchungen über die Physiologie der Uterusbewegung," von Röhrig, 'Arch. f. path. Anat. u. Phys.,' Bd. lxxvi, 1879, S. 1.

† 'Anatomie comparé du Cerveau,' 1824, t. ii, p. 610.

‡ 'Journal of Physiology,' vol. xix, 1895–6.

lation of the parturient uterus. Thus uterine contractions may be induced by applying heat or cold to the abdomen, by passing a catheter, by hot or cold rectal injections, by drawing back the perinæum, or by putting the child to the breast.

Digital stretching of the cervix during labour will very promptly induce a uterine contraction, but this may do so partly by causing a local peristalsis as a result of local irritation.

In my case it may be assumed that until the membranes were ruptured the spinal reflexes were to a great extent absent, and in confirmation of this, the first stage took at least ten hours, the uterine action being so far apparently automatic. As soon as the membranes were ruptured reflex action became very marked, and the second stage only lasted two and a half hours.

The following case shows a similar difference between the prolonged automatic first stage (twenty-four hours), and the short second stage, mainly reflex in its action (fifteen minutes).

*Scanzoni's Case** (1851).

Case 5.—A peasant woman, aged 32, had previously given birth normally to two children, the last in July, 1848. Eight days after this last confinement she was chilled by standing in the river washing clothes, and two hours later paraplegia developed in the left leg, and in two weeks spread to the right leg and persisted.

She conceived in April, 1850, and was admitted into Wurzburg Maternity Hospital in December. On January 28th, 1851, labour began, but contractions of the uterus were so feeble that after the lapse of twenty-four hours the membranes were artificially ruptured, allowing a quantity of liquor amnii to escape, and in less than a quarter of an hour a healthy girl was born in the first cranial position.

* 'Lehrbuch der Geburtshilfe,' Band iii, p. 500.

The puerperium was normal, and she left the hospital eight weeks afterwards, and when seen eighteen months after was in the same lamentable condition of paraplegia.

Without denying the influence of the spinal cord in controlling, or, as we would now say, co-ordinating the uterus, Sir James Simpson* believed that the spinal cord was not a *sine quâ non* in the accomplishment of the expulsive function of the uterus.

It is well known that the uterus can automatically contract, like the heart, for Kehrer† and Calliburces have already proved that a uterus separated from the body will contract independently if kept at the normal body temperature. The contractions occur quite rhythmically and regularly, the separate portions of the organ alternately contract and relax, meantime twisting spirally, and the separate undulatory movements last uniformly a quarter to half a minute, and follow one another almost without a break. These rhythmical movements cease of themselves about an hour after the death of the animal.

The main question is to decide whether the uterus can automatically and co-ordinately expel its contents when deprived of all central nerve influence.

Sir James Simpson's experiments, as described by Dr. Watt Black, appear to show that the uterus, in some animals at all events, can expel its contents as far as the vagina or the relaxed lower zone of the uterus without spinal assistance.

Sir James Simpson's Experiments (1848–9).

"He removed the spinal cord, from the first dorsal vertebra downwards, in several sows a few days before labour was due. Some of the pigs died, but in others labour came on and progressed regularly. In each case all the fœtuses of the litter were born except the last one."

* 'Selected Obstetric Works of Sir J. Y. Simpson,' edited by Dr. Watt Black, 1871, p. 150.

† Quoted by Riemann, see foot-note, p. 211.

"The whole series passed from the uterus into the vagina, one behind the other, and each in its proper membranes. The uterine contractions proceeding from fundus to cervix were sufficient to expel the fœtuses from the uterus; and each fœtus, as it came into the vagina, was thence extruded by the force transmitted from the fœtus behind it: but when the last fœtus came into the vagina it remained there, because there was nothing to transmit the uterine expulsive force, while the vaginal and abdominal muscles, being under the influence of the spinal nerves, had been rendered powerless by the removal of the spinal cord."

Riemann * states that he has repeated Simpson's experiments regarding the influence of the lower part of the spinal cord in labour, on a cat, with complete success. Although the spinal cord was opened in two places, and completely and carefully destroyed from the third dorsal vertebra downwards, the animal gave birth to a kitten two days afterwards, shortly before its death.

In the following experiment, however, by Goltz, where the lumbar enlargement was intact, it will be observed that the birth of the fœtuses was very similar to that in Simpson's experiment.

Experiments by Goltz † (1874).

In December, 1873, Goltz divided the spinal cord of a puppy in the dorsal region. In the following May the animal was in perfect health. At the end of that month "heat" came on, attended by all the usual phenomena, psychical as well as physical. Impregnation was effected, and the animal became gravid. The pregnancy was normal; the mammary glands enlarged as usual. Finally, one living and two dead puppies were born, the first without and the latter two with assistance; the mother, however, sank soon afterwards from puerperal peritonitis.

* "Einige Bemerkungen über die Innervation der Gebärmutter," 'Arch. f. Gynäk.,' Bd. ii, 1871, p. 97.

† 'Pflüger's Archiv,' ix, 1874, p. 552 (and see foot-note, p. 218).

After the birth of the first puppy the mother ate nothing, except the afterbirth, looked melancholy, and on the second day her skin was particularly cool, and she had rattling in the throat, and died in the afternoon. Post-mortem examination showed the cause to be peritonitis with purulent ichorous exudation, caused by a hole about as large as a pea in the posterior wall of the uppermost end of the vagina, probably made by the continuous pressure of the head of the third puppy on the vaginal wall. There had been no regeneration of the divided spinal cord, the two portions being separated by more than a centimetre.

A still more important experiment is the following, by Professors Ewald and Goltz* (1892).

A bitch was shown at the Third International Physiological Congress, from which 158 mm. of the spinal cord below the middle dorsal region had been removed, including the cauda equina. In November, 1892, the cord was divided in the mid-dorsal region; in January, 1893, 70 mm. of the cord were removed below the point of section; and again in June, 1893, the remaining lower part of the cord, including the cauda equina, was removed. The dog survived, was lively, and apparently in good health two years after. The skeletal muscles of the posterior parts of the body, supplied by nerves below the seat of section, were paralysed, and had almost completely degenerated, but the animal retained the power of defæcation, and urination was almost normal. The anal sphincter remained excitable, responding to faradic stimulation; the temperature of the legs remained normal, and section of the sciatic nerve had no effect on it. Since the last operation the bitch had become pregnant, had given birth to young ones, and suckled them normally.

Sir James Simpson quotes a case described by Paget, which I here repeat, though it does not seem to me to prove his point, there being no evidence to show the

* 'Medical Chronicle,' November, 1895.

absence of spinal reflexes from the lumbar part of the spinal cord.

Paget's Case.

Case 6.—A woman was attacked with paraplegia in the eighth month, and had neither sensation nor motion below the umbilicus, and no reflex movement could be excited by tickling the feet. Labour came on at the full time, and the fœtus was born without artificial assistance. The woman was quite unconscious that parturition was going on at all, and the fœtus was found dead in the bed.

Sir James Simpson concludes by saying that "though the uterine contractions are, no doubt, guided or influenced by the brain and spinal cord, they are essentially independent of these organs. The ordinary nervous power is derived neither from the brain nor from the spinal cord, but probably from the ganglionic system of nerves; for although the uterus will contract even when cut out of the body, we do not believe that it would contract regularly unless governed by some nervous energy."

Brachet's case, now to be described, is interesting, as it appears to be the only case in a woman where the spinal lesion seems to have been in the lumbar region of the cord, and serves to show that uterine action may be materially weakened by such a lesion.

M. Brachet's Case * (1837).

Case 7.—"I knew a lady, the mother of three children, who became paraplegic; the loss of sensation *was as high as above the pubes.* Sensation during coitus was lost, yet she became with child for the fourth time. At the end of nine months parturition appeared to commence, but in so vague a manner that she only suspected it by the date of her pregnancy. The uterus could scarcely be felt to contract when the hand was applied to the abdomen, and there was no pain whatever. By the touch I recognised

* Brachet, 'Recherches,' 2nd edit., Paris, 1837, pp. 299 and 313.

the same tension of the uterus, the orifice of which was open and of a remarkable softness, and the secretion of mucus was abundant. I left her for twenty-four hours, but the labour made no progress. She wished to have the confinement finished, as she felt she could not complete it without assistance. By some titillations of the neck of the uterus I endeavoured to provoke contractions, but without effect. The soft organ admitted of being so much distended in every direction that the orifice was completely dilated. The head of the child presented naturally. I pierced the membranes, and the water escaped by the contractions of the uterus. The head descended, and engaged in the upper aperture of the pelvis, from which it did not move. I endeavoured during two hours to produce a natural parturition by titillating and piercing (*sic*) the uterus, but in vain ; the contractions did not come on. With the forceps I extracted a full-grown living child. The uterus contracted slowly upon itself. During more than an hour I made frequent frictions on the abdomen, but in vain, to produce expulsion of the placenta, and was obliged to introduce the hand to remove it. It was only with an extreme degree of slowness that the uterus regained its ordinary volume."

I can find no other cases of women in whom the lumbar enlargement of the cord was so diseased or injured that it may be assumed to have been functionless, Brachet's case being the nearest approach to that condition. All other cases had the lesion in the dorsal region, and spinal reflexes from the lumbar region could therefore not be excluded.

Sir James Simpson's and Goltz's (1893) experiments already described, where the lower half of the spinal cord was removed, are therefore the only ones where this absence of spinal influence can be certainly assumed, and unfortunately these experiments seem to be but little known to physiologists. This is explained by the fact that, as Dr. Watt Black informs me, Sir J. Simpson's were never published, though they were annually described

to his class in the University of Edinburgh. Dr. Black took the facts from manuscript notes in 1861, but Prof. A. R. Simpson tells me the experiments were made in 1849. Riemann's repetitions were done in 1871, and Goltz's in 1893.

Dr. Pembrey has referred me to some experiments by Serres* in 1824, who found that when he divided the spinal marrow of pregnant rabbits, guinea-pigs, &c., in the lumbar region, some time before the period of parturition, they died undelivered, and if section of the cord was done during labour, it was at once arrested. Serres concludes "that the integrity of the inferior part of the spinal marrow would appear to be necessary in order that the uterus may rid itself of the products of conception."

I think, however, that though Brachet's and perhaps Scanzoni's case bear out this opinion, Sir James Simpson's experiments on animals tend to show that the uterus may be able to expel its contents as far as the vagina, or, at all events, as far as the relaxed lower zone of the uterus and cervix, even when the lumbar part of the cord is diseased.

It is only fair to state that somewhat different views are held by other observers. Thus von Kilian† in 1852 made some experiments on animals, and was led to believe that the centre for the uterus was in the medulla. Subsequent experiments (von Röhrig) have shown this to be almost certainly incorrect.

Again, Oser and Schlesinger,‡ according to Hermann writing in 1896, declare that there is a centre in the uterus, which can be stimulated to contract by the blood being rendered venous, but von Röhrig disproves this also.

Dembo§ in 1885, from experiments on rabbits, con-

* 'Anatomie comparé du Cerveau,' t. ii, p. 610.

† "Einfluss der Medulla oblongata auf die Bewegungen des Uterus," von Kilian, 'Zeitschrift für rationelle Medicin,' Neue Folge, Bd. ii, 1852, p. 1.

‡ 'Lehrbuch der Physiologie,' Hermann, 1896.

§ T. Dembo, "Zur Frage über die Unabhängigkeit der Kontraktionen der Gebärmutter von dem Cerebrospinalnervensystem," 'Biologisches Centralblatt,' iv, 1885, p. 349. Abstract; original is in Russian.

cludes that there exists a peripheral nerve centre in the upper part of the anterior wall of the vagina, stimulation of which brings about a marked contraction of the two horns of the uterus, even when the uterus is cut out of the body. He states that a microscopical examination of this vaginal area showed numerous nerve-cells.

Dembo also states that Professor Rheims of Kieff has found that after section of the hypogastric plexus on both sides in a pregnant rabbit, delivery took place without trouble.

Dr. Riemann* of Kiew stated in 1871, first, that contractions of the uterus may be produced by stimulation of the spinal cord, especially of the cervical and lumbar parts; secondly, that in addition, after bisection of the spinal cord below the last cervical vertebra, weak contractions of the uterus may be produced by stimulating the cervical portion of the spinal cord, and these contractions cannot be ascribed to the influence of the cervical spinal cord on the circulation.

Riemann states that the peristaltic or antiperistaltic direction of the uterine contractions seems generally to depend on the place whence the stimulation operates which produces the contraction.

In the 1877 edition of his 'Physiology' Professor Michael Foster† says, "We are utterly in the dark as to why the uterus is suddenly thrown into action, and within a few hours gets rid of the burden it has borne so long with such tolerance; and until we know what starts this active phase, we shall remain in ignorance of the exact manner in which the activity is brought about.

In 1895 the same author‡ says that he considers the act of parturition is partly a reflex one and partly automatic, for he states that the more rhythmical uterine contractions which occur during pregnancy will take place after complete destruction of the spinal cord. He regards the efferent impulses which issue from the lumbar centre not so much of the nature of directly excitor

* See p. 211. † P. 487. ‡ P. 1538.

impulses as of impulses of an augmentor kind, increasing and developing the intrinsic contractions of the uterus itself.

Post-mortem parturition.—I had expected to get some help from these interesting cases, but on a careful study of all the cases I can find, there seem to be very few which can be attributed to the continuation of uterine contraction after death. Most of the recorded cases of post-mortem births occurred some days after death, when expulsion of the child was caused by increased abdominal pressure due to putrefactive gaseous distension during muscular relaxation.

Some few cases may be due to rigor mortis, which affects the involuntary uterine muscle for a longer period than voluntary muscle.

In the classic paper by Dr. Aveling in vol. xiv of the Society's 'Transactions,' where forty-four cases of post-mortem labour are narrated, there are only two which can be said to be due to continued uterine action post-mortem. I will briefly relate these.

The first was the case of a pregnant woman who, Rudolph Camerarius* states, was hung by a Spanish Inquisitor in 1551. Four hours after her death, while still hanging on the gibbet, two living children fell from her. Even here gravitation was doubtless a prominent factor, the labour itself being initiated by the asphyxia.

The second case was described by Schenkius,† who states that a women died at 5 p.m., and that at 3 a.m. (ten hours after) the bystanders heard a crack, and a child was born dead.

One or two other cases are given, but without detail.

There are other interesting facts which appear to prove that uterine contractility and retraction may continue or even commence after death, induced, or kept up perhaps, as Harvey thought, by the "struggling of the imprisoned fœtus."

* 'Sillogæ Memorabilium Medicin.'

† 'Obs. Medic. Lib.,' iv, de Partu, Obs. 14.

Thus Baudelocque* found on opening the body of a woman whom he had delivered immediately after death, that the womb contracted upon the placenta, which he had left *in utero*.

Arbeiter,† three quarters of an hour after the mother's death, extracted a child by turning, and removed the placenta. During the operation the uterus was flaccid, but when emptied, it contracted to the "hard ball" usual after normal delivery.

Leroux ‡ says that he perceived, in delivering a woman who had been dead more than a quarter of an hour, that the womb contracted as the child left it, and that it preserved as much solidity as if the woman had been alive. When he proceeded to extract the placenta the neck of the uterus so much resisted the introduction of his hand as to lead him for the moment to doubt the reality of the woman's death.

Sir J. Simpson § said that uterine action has been seen where Cæsarean section has been performed after the mother's death.

A consideration of some of the preceding cases throws a side light on other matters of obstetric interest. I will allude to only two—conception during paraplegia, and lactation.

Conception.—In several of the cases and experiments already described, conception has occurred during complete paraplegia.‖ The impregnated ovum is carried, as

* 'Dictionnaire des Sciences médicales,' vol. xix, p. 388.

† 'Monatssch. für Geburtsk.,' April, 1862.

‡ 'Traités des pertes de sang.'

§ 'Selected Obstetric Works,' edited by Dr. Watt Black, vol. i, p. 148.

‖ From Goltz's 1873 experiment already recounted on p. 211, 'Pflüger's Archiv,' Bd. ix, 1874, p. 554.

"At the end of the month of May, five months after section of the cord, the external genitals of the pup began to swell, and from them simultaneously a bloody exudation occurred. We could not doubt that we had to do with a sign which proved that our female dog was feeling sexual desire for the first time. This was promptly proved to be correct when a strong dog of the same size was placed with her; for he forthwith attempted copulation,

usual, along the oviduct to the uterus, showing that the cilia are performing their function co-ordinately. This is only what has been observed to be the case with cilia elsewhere. Thus the trachea, for instance, may be removed entirely from the body, and be deprived of all nerve-supply, and yet its cilia continue to act co-ordinately, so that it is doubtful whether the ganglionic system of nerves is really essential for co-ordinate cilia action.

The secretion of milk.—The fact that the mammary glands behave normally when there can be no direct spinal communication between the pelvic organs and the breast is, at first glance, remarkable. In my case there is an instance of this, for the lesion was between the fifth and seventh dorsal vertebræ, and the mamma is supplied from the third, fourth, and fifth dorsal nerves, yet the breasts enlarged during pregnancy, and during the puerperium the mammary function was performed with normal punctuality and persistency. The quality of the milk also was excellent. It is true that the nipples were sore for a few days, but this at once yielded to treatment.

Michael Foster states that milk is secreted when the mamma is deprived of all connection with both the spinal and sympathetic systems, though the nipples are not then capable of becoming erect.

which, considering the condition of the female, must be unfruitful. She, however, received his advances very willingly, though she hitherto had savagely repulsed by biting every dog which came near her. Now that sexual desire in the female was proved, it was necessary to put the animal by artificial means in such a position that the dog could carry out copulation. The servant at the institute easily succeeded in doing this by adequate support of the hind part of her body. On June 6th copulation was completed for the first time, and on the next day three times more with the same dog, and once with another. During the act the female gave no sign that she felt anything of what was taking place in the hinder part of her body. After conclusion of the act, *i. e.* after the dog had left the back of the female, the swollen glans penis remained, as in the copulation of uninjured dogs, for some time encompassed by the vagina. During this time one could see reflex rhythmical contractions of the sphincter ani et cunni in the female. The hind legs also made rhythmical intermitting flexion and spasmodic movements."

It is known further that lactation is not dependent upon the ovaries, for when double ovariotomy has been performed during pregnancy, not only may labour ensue at its normal date, but lactation may be absolutely normal. It is believed that the mammary function, pigmentary and other tissue changes, may turn out to be dependent upon some chemical change in the blood, and Dr. Pembrey has referred me to an experiment made by Paul Bert,* who removed the mammary glands from two ewes, and after the wounds were healed put them to a ram, and they became pregnant. During pregnancy the urine was free from sugar, but after delivery it contained sugar for several days, and then it gradually disappeared. The urine from two normal ewes after delivery contained no sugar.

Paul Bert believes that the milk-sugar is formed, not in the mammary gland, but in other parts of the body, probably in the liver.

It is possible that some of the cases of glycosuria in puerperal women may be similarly explained.

The exceptional cases of lactation in male infants, youths, and men are probably due to secretion from morphological remains of the mammary glands.

Conclusions.—The above cases and experiments seem to show that in women affected with paraplegia, from either injury or disease in the dorsal region of the spinal cord, labour may commence at the normal period of gestation, and may progress in an approximately normal manner, but without sensation of pain.

Involution and lactation are also normal.

It is proved also from both cases and experiments that conception may take place during paraplegia.

Further experiments, as well as clinical facts, are required before the physiology of parturition can be known, and much will be done when it is discovered with certainty what is the force by which the process of labour is initiated at the end of gestation.

* "Sur l'origine du sucre du lait," 'Compt. rendu,' Bd. xcviii, No. 13; and Hermann's 'Lehrbuch der Physiologie,' 10th A., 1892, S. 174.

Meanwhile the following views seem to be fairly established:

1. The act of parturition is partly automatic and partly reflex, these actions corresponding in the main to the first and second stages of labour respectively.

2. Direct communication with the brain is not essential to co-ordinate uterine action, though the brain seems to have a controlling influence upon the pains, helping to make them regular, with well-defined intermissions.

3. Direct communication between the uterus and the lumbar enlargement of the cord, through the medium of the sympathetic ganglia between the first and third lumbar,* is probably essential to the regular and co-ordinate contraction and retraction of the uterus, as occurs in normal parturition.

4. It seems also probable that the uterus is able automatically to expel its contents as far as the relaxed part of the genital canal, even when deprived absolutely of spinal influence, spinal reflexes being then necessarily absent. But in the absence of reflex action the entire parturition would be irregularly, and probably incompletely performed, as in Sir James Simpson's experiments and Brachet's case.

5. Lactation is not solely due to nervous influence, but partly to chemical changes in the blood, affecting secondarily the mammary glands and other tissues of the body. This chemical change in the blood is not of ovarian origin, but is probably due to the metabolism of the pregnant uterus.

The author wishes especially to thank Mr. Astley Bloxam for permitting him to make use of his notes, and is indebted to Messrs. Bickford and Atkinson, residents at Charing Cross Hospital, for their care of the case whilst in the surgical and obstetric wards. He also returns thanks to Professor Simpson, Dr. Watt Black, and Dr. Pembrey, for the assistance they have afforded him in giving him references and information bearing on

* See p. 192.

the subject, and to Drs. Mott, Hunter, and Pembrey for their investigations connected with the post-mortem appearances of the case.

Dr. Mott wished to thank the President for his courtesy in asking him to take part in the discussion upon this most valuable paper by Dr. Routh, and he congratulated the author upon the admirable manner in which he had discussed the physiological questions relating to parturition. Dr. Mott remarked that he had examined sections of the spinal cord at the seat of lesion, and, as Dr. Routh had stated, he found that the crush had completely destroyed the nervous structure at the seat of the injury; but that apparently many cells in the anterior tissue of the lumbar enlargement were fairly normal in appearance, inasmuch as these were still in connection with the uterus. This case did not prove, like the dog of Goltz, the independence of action of the uterus. Dr. Mott remarked that at the International Congress at Berne he had seen demonstrated the control of the sphincters in this bitch, deprived previously of a great part of its spinal cord. The experiment proved that in the dog the uterus could contract effectually without cerebro-spinal influence, and that the sphincters could maintain their tonus—facts which upset all our previous notions. It must be remembered, however, that the sympathetic chain and the posterior spinal ganglia remained. These are connected, and probably formed the reflex arc which maintained the tissues in the sphincters. He understood Dr. Routh to say there was a complete loss of tonus in the sphincters, although the lumbar enlargement was not directly injured, also the knee-jerks were abolished; and another very interesting fact he mentioned, viz. *that for eight days after the crush the normal uterine contractions ceased;* but it must be remembered that destroyed tissue, such as a severe crush of the cord by fracture, is surrounded by excited tissue, and both Goltz and Brown-Séquard emphasise the fact that paralysis may originate in active arrest of action in such excited tissue, and he thought this to be the probable explanation. Dr. Mott thought Brachet's case and the experiments of Goltz and Sir James Simpson clearly demonstrated that the uterus, like the heart, is capable of contracting independently of the central nervous system: all it requires is the physiological stimulus. Dr. Mott would like to ask Dr. Routh and the Fellows of the Society what they regarded as the physiological stimulus that excited the uterus to contraction at full term. He ventured to suggest that it might be a biochemical condition of the blood of the fœtus at full term, *e. g.* an increase of carbon dioxide. That profound biochemical changes take place during pregnancy is highly probable. The

enlargement of the mammary gland in this case after interruption of the spinal connection between these structures and the uterus suggests this; and the fact that the mammary glands enlarge after all the nerves have been divided, both cerebro-spinal and sympathetic, proves that an altered condition of the blood can be the only means of bringing about this associated functional activity in two remote structures. The experiment of Paul Bert, alluded to by Dr. Routh in his paper, also supports this idea. Dr. Mott said it was extremely interesting to learn that the knee-jerks were observed by Dr. Pembrey to return faintly, and he understood him to say also that twitchings in the muscles of the limbs had been observed a short time after parturition. Could this be accounted for by an awakening of these ganglion-cells of the lumbar enlargement which he had found still intact by the profound stimulus of parturition? for in the normal process all these muscles, which were paralysed, are brought into play, and there was no evidence to show that the connections of the uterus and the lumbar spinal cord had been destroyed.

Dr. Peter Horrocks thought that natural labour was not only automatic and reflex, but also voluntary. Experiments had shown that after removal of all external nerve influence the uterus was able to expel its contents. This was really only an instance of a general law. Whether, however, it was possible for an organ like the uterus to contract rhythmically without any nerve-ganglia in its own walls was a question. Certainly it used to be taught that if a turtle's heart were divided transversely after removal from the body, the upper half would continue to beat, whilst the lower half would cease, and this was explained by the fact that the upper half contained nerve-ganglia and the lower did not. Again, there could be no doubt that the uterus was under the influence of reflex action; and he thought that the rapid labour in Dr. Routh's case illustrated this. It was a well-known fact that the brain exerted an inhibitory influence upon the reflex spinal-cord centres. Hence when a frog's head was cut off the reflex actions of the frog were very much more irritable; and so it would appear that the removal of the brain influence in this case had resulted in a quick labour. Later, Dr. Horrocks asked one of the speakers if he denied that the brain inhibited the spinal reflex centres.

Dr. Bertram Abrahams wished to emphasise the view that the initiation of the action of smooth muscle and of secreting glands did not necessarily depend on nervous action. The submaxillary gland would secrete when all nerves leading to it were cut, and in Dr. Routh's case the mammary gland produced milk at the normal time and in the normal manner, though no direct nervous communication between it and the uterus remained. With regard to involuntary muscle,

there was conclusive evidence that the heart-beat originated independently of the central nervous system, and paroxysmal tachycardia was often, no doubt, like the fibrillar contraction obtained experimentally by M'William, due to direct stimulation. The same cause would, in Dr. Abrahams' opinion, account for many of the cases of so-called "gastric neuroses" which had come under his observation. With regard to the uterus, it appeared to be conclusively shown that this important mass of smooth muscle continued to contract even when removed from the body, but this case could not be taken as deciding the question as to the causation of parturition, as the so-called "lumbar centre" was practically intact. Still the speaker held that there was no evidence as to the reflex origin of parturition, while at the same time there could be no doubt, as in the case of the heart-beat, of its reflex control. He questioned Dr. Routh's distinction between the automatic nature of the first part of labour and the reflex of the second, holding that rupturing the membranes, stretching the os, &c., acted on the uterus directly, and not through the nervous system. He felt convinced that in the future many actions now considered nervous in origin would prove to be, in Dr. Mott's words, biochemical in nature.

Dr. Heywood Smith did not know whether Dr. Phillips had found any further record of a case of his that occurred some years ago in the out-patient department of the British Lying-in Hospital when he (Dr. Smith) was senior physician. In Dr. Phillips's temporary absence he was called in by the midwife to a case of paraplegia. As far as he could recollect the patient did not suffer any pain, and with the exception of the lack of expulsive abdominal action the labour was natural. He did not know whether there had been made of recent years any dissection of the nerves of the pregnant uterus as a whole. As far as he knew there were two such dissections, one by Dr. Robert Lee, which he believed was in the museum of St. George's Hospital, and the other by Dr. Snow Beck, which he had left to him to present to the museum at the Hospital for Women, where it could be seen, and was well worth an inspection. In that preparation were shown a large number of ganglia with numerous intercommunicating nerve-filaments. He was aware that grave doubts had been expressed as to these filaments being nerves, but he hoped that in these days of accurate microscopical research, permission would be obtained for a detailed examination and reports on these valuable specimens. With regard to the question of the initiative cause of labour, he considered that it depended upon a definite cycle of the maturation of the ovum. That there existed a definite cycle of ovulation no one seemed to doubt, though what it was no one had hitherto been able to demonstrate. As such a cycle existed in the case of fruits, which separated from the parent tree at some definite

time, when maturation was followed by a degeneration of the woody fibre that led to the separation, so he considered that at the determination of the period of ripeness of the full-grown ovum some degeneration at the bounding zone of the ovum and uterus led the uterus to act upon the ovum as a then foreign body, and to extrude it.

Dr. DAKIN asked the author if any reflex contractions of the abdominal muscles had been observed during the second stage of labour. It appeared that the spinal cord below the sixth dorsal vertebra, though cut off from the higher centres, was still sufficiently capable of activity to give rise to reflex action. It was interesting as helping to show how far the abdominal contractions which occur during the second stage of normal labour were purely reflex. As regards the question of the cause of labour, no doubt the maturity of the ovum led to its expulsion; but the moment of labour, which became in practice a matter which needed as close prediction as possible, depended rather on the menstrual rhythm, which was no doubt preserved in a modified degree during pregnancy. The prediction of the moment of the beginning of labour, made on the basis of this last character of the uterus, was usually pretty exact. He would ask Dr. Routh also what connection he thought there was between involution of the uterus and lactation. Dr. Dakin could not help thinking that the absorption during the puerperium of the mass of muscle constituting the uterus at full term had much to do with the increased supply of milk which prevailed after the first day or two of the lying-in period. This absorption was now known not to take place by a process of fatty degeneration of the muscle-fibres, as was formerly supposed.

Dr. ARTHUR GILES said that while reading Dr. Amand Routh's most interesting paper, he had been much struck by the fact that in spite of the serious accident to the mother the child had survived, and labour had not been brought on at once. The case illustrated very well the wonderful tolerance often shown by the pregnant uterus to accidents and operations, which profoundly affected the mother's condition and the vitality of the child *in utero*. The continuance of pregnancy was no doubt closely associated with the absence or diminution of uterine contractions for eight days after the accident, to which Dr. Routh had called attention. He was much interested in Dr. Mott's hypothesis that the exciting cause of the onset of labour might be due to an increased quantity of carbonic acid in the blood, due to deficient osmosis through the degenerating placenta; but he would venture to suggest that such a want of oxidation, marked enough to set up vigorous uterine contractions, would also be sufficient to affect the fœtus in such a way as to excite respiratory efforts; the result of these, while the fœtus

was still *in utero*, would be to cause the death of the child by drowning in the amniotic fluid. Among the post-mortem cases quoted by Dr. Routh there was one to which he would like to call special attention, namely, that in which two *living* children were said to have been expelled four hours after the death of the mother by hanging. It seemed to him that this indicated a considerable effort of the imagination, or an extraordinary error of observation on the part of the original recorder of the case; for it was a well-known fact that the child so soon succumbed after the death of the mother that a post-mortem Cæsarean section must be performed within fifteen minutes at the latest after the mother's death, if there was to be any prospect of saving the child's life. He wished to join with previous speakers in thanking Dr. Amand Routh for his most interesting paper.

Dr. PEMBREY remarked that the involuntary muscle of the uterus could probably contract rhythmically without the influence of the central nervous system or of peripheral ganglia, for this had been proved by Engelmann to be the case in the involuntary muscle of the upper portion of the ureters. This view was also supported by the fact that the uterus would contract for some time after removal from the body, when all the ganglia would probably be dead. In Simpson's experiments the results were conclusive, for the delivery quickly followed the removal of the lower portions of the spinal cord, and might have been due to the shock of the operation or to sepsis. The record of the experiments was very incomplete. On the other hand, the experiments made by Goltz showed conclusively that in bitches "heat," conception, pregnancy, parturition, and lactation could take place after removal of the lumbar portion of the spinal cord. The difficult question was to decide whether the relaxation of the os uteri was due to reflex inhibition through a centre in the lumbar portion of the spinal cord. If this be so it would appear that in the bitch without that portion of the spinal cord the delivery took place because the contraction of the uterus forced the fœtus in the line of least resistance, that is through the os uteri. As regards the causes of labour, there seemed to be no satisfactory explanation. The accumulation of the ordinary products of fœtal metabolism would not appear to be the stimulus, for although triplets would probably produce a marked effect by their metabolism, yet the period of gestation was not shortened. There was, without doubt, a marked relationship between the uterus, ovaries, and breasts, and this was not entirely due to the nervous system, but also to the chemical changes occurring in the metabolism of the several organs. The secretion of milk still proceeded when the nerves supplying the gland were cut; the bitch without her lumbar spinal cord suckled her pups. Brown-Séquard's experiments in the extract of

ovaries, the effect of removal of the ovaries upon the development of sexual characteristics, and upon the growth of cancer of the breast, seemed to support the view that these organs resembled the thyroid and pancreas in producing an "internal secretion." Paul Bert's experiments in the effect of extirpation of the mammæ of pregnant ewes showed the existence of some of these chemical changes in the body.

Dr. Amand Routh in reply said he agreed with Dr. Mott that the crux of the whole question was the difficulty in determining the cause of the onset of labour at term. The cause was probably a biochemical one, and Dr. Mott's suggestion that this resulted from the accumulation of carbonic acid in the placental circulation was not to be lightly rejected, for it was known that asphyxia induced uterine contraction, and caused abortion if pregnancy existed. In reply to Dr. Horrocks he said there was incontinence of urine from overflow, and also fæcal incontinence after the primary constipation had been overcome by enemata. The customary inhibition with relaxation of the lower zone of the uterus was definitely present in the first stage of labour, and there was no attempt at rigidity of the cervix. In reply to Dr. Abrahams he thought there could be no doubt that the second stage in the case recorded was mainly reflex, for though there was no sensation of pain, there was an involuntary "holding of the breath," and though there was no action of the abdominal muscles, there was undoubtedly diaphragmatic contraction, and even "crying out" at the end of the second stage. These were clearly reflex phenomena, and other proofs were adduced in the paper. The woman died from weakness six months after the parturition, eight and a half months after the fracture. Dr. Giles was doubtless right in explaining the curious fact that the accident was not followed by death of the fœtus and premature labour. The uterus was absolutely inert for eight days following the accident, no intermittent contractions being palpable. Dr. Pembrey's suggestions as to further experiments being made to determine the question of the co-ordination of uterine contractility after removal of the lumbar enlargement would, he hoped, be adopted by physiologists.

JULY 7TH, 1897.

W. DUNCAN, M.D., Vice-President, in the Chair.

Present—40 Fellows.

Books were presented by the St. Bartholomew's Hospital Staff, the Trustees of the Massachusetts General Hospital, Boston, U.S.A., the New York Academy of Medicine, and Drs. Currier and Warren.

Arthur Thomas Todd-White, L.R.C.P.Lond., was admitted a Fellow of the Society.

Richard A. Coles, M.B., Ch.Aberd., was declared admitted.

The following gentleman was proposed for election :—
William Bain, M.D.Durh., M.R.C.P.Lond.

RAPIDLY GROWING FIBROID IN A PATIENT AGED SIXTY-THREE.

Shown by A. L. GALABIN, M.D.

DR. GALABIN showed a large œdematous fibroid tumour of the uterus, which was growing rapidly at the age of sixty-three, and was killing the patient by the effect of abdominal pressure. The tumour had been known to exist for twenty-five years, had suffered no check at the time of the menopause, which was normal, and had grown rapidly

TWO UNUSUAL CASES OF TUBAL GESTATION: THE ONE CAUSING CHRONIC INTESTINAL OBSTRUCTION, AND ACCOMPANIED BY A HÆMATOSALPINX OF THE NON-GRAVID TUBE; THE OTHER SIMULATING RETROVERSION OF THE GRAVID UTERUS.

By Arthur E. Giles, M.D., B.Sc., M.R.C.P.Lond., F.R.C.S.Ed.,

and

Ewen J. Maclean, M.D., M.Ch.Ed., M.R.C.P.Lond.

(*Abstract.*)

Case 1.—The authors record a case of tubal gestation, admitted under Dr. Giles at the Chelsea Hospital for Women. The symptoms and physical signs were principally those of pelvic cellulitis, together with evidences of pregnancy; whilst the case was complicated by chronic intestinal obstruction. In some respects the condition suggested retroversion of the gravid uterus; and with this idea an attempt was made to push up the mass lying behind the cervix under an anæsthetic, but without success.

The patient gradually got worse. The propriety of opening the abdomen was discussed in consultation with Mr. Bland Sutton and Dr. Eden; but it was agreed that the patient's condition was so grave that she would probably not stand the shock of operation, an opinion confirmed by her death shortly afterwards.

Case 2.—A somewhat parallel case is recorded, which was seen by Dr. Giles at the Middlesex Hospital, and afterwards operated upon by Dr. William Duncan. The symptoms and

physical signs were those of retroversion of the gravid uterus, causing retention of urine. An attempt to push up the mass behind the cervix under an anæsthetic was unsuccessful; but while resting in bed symptoms improved.

Nine weeks after admission she was operated upon, and a tubal gestation was found filling up the pelvis behind the uterus.

The main points of interest from the clinical side are discussed under the following heads:

1. The difficulty in diagnosis in both cases.
2. The situation of the gestation sac, which occupied a median position in the pouch of Douglas.
3. The pressure capable of being exercised by a tubal gestation on surrounding structures.
4. The "natural history" of tubal gestation when not interfered with by operation.

Two conclusions are drawn as to treatment.

Firstly, that a pelvic tumour which differs in signs and symptoms from classical types should not be treated by the expectant method, but should be dealt with surgically as soon as possible.

Secondly, that if a tubal gestation be diagnosed before rupture takes place, the possible train of disasters will be best averted by immediate operation.

The pathological report in the first case showed that the pelvis was roofed in by a thick layer of inflammatory lymph, and its cavity tightly packed by an ectopic pregnancy of the left tube, which had developed in the posterior pelvis and hollow of the sacrum, pushing the uterus forwards and to the right.

In the *left appendages* the distal end of the tube was involved in the formation of the gestation sac, which was ovoid, and measured 12 × 9 cm. The bulk of the placenta was superior. The amniotic cavity contained $2\frac{1}{2}$ oz. of fluid, and a well-formed fœtus 12 cm. in length, attached by a cord with a marginal insertion. The proximal portion of the tube showed, microscopically, changes similar to those lately described as decidual.

In the *right appendages* the ampulla and fimbriated end of the tube were dilated into a cystic swelling, the size and shape of a hen's egg, containing altered blood. At either pole was a soft, spongy, blood-filled tissue, which showed, microscopically, sec-

tions of altered mucosal fronds, resembling sections of some chorionic villi.

In the proximal portion of the tube were changes similar to those on the left side. In the ovary there was a recently ruptured follicle, but no corpus luteum.

In the *uterine mucosa* well-marked decidual changes were present, and there was some blood in the uterine cavity.

Case 1.—The patient, Mrs. F—, aged 38, was admitted to the Chelsea Hospital for Women on September 10th, 1895, under the care of Dr. Giles, when she gave the following history.

Family history.—Unimportant.

Previous health.—Till her marriage, thirteen years ago, she had always been healthy. Of late years she had suffered a good deal from flatulent dyspepsia. The bowels had always been fairly regular.

Menstruation had been regular, moderate in quantity, and painless since its commencement. The last two menstrual periods had been missed.

Marriage.—She was married at the age of twenty-five, and had never been pregnant.

Present illness.—This dated from the beginning of June, when she was away at Weymouth for a holiday. She was seized with severe abdominal pain and vomiting, and was under treatment for a month, after which she improved, and returned home. After a fortnight of fairly good health she had a second and more severe attack of pain and vomiting; at the same time she had "bearing-down pains," but she could not say whether she passed any blood. She got gradually worse, and Dr. Giles was called in to see her. Her condition was very grave, and immediate removal to the hospital was advised.

Condition on admission.—She was admitted the same evening, and at 6 p.m. the pulse was 122 and the temperature 104°. The face was rather drawn, and the body somewhat emaciated. The heart and lungs were normal. The breasts contained milky fluid. The abdomen was

greatly distended and tympanitic, so that palpation was impossible; percussion showed general hyper-resonance. There was no localised abdominal tenderness. The vagina was hot and rather dry. The cervix was soft, and was low down, with a vertical direction; it was somewhat compressed against the pubes. The pelvic brim and cavity appeared to be filled up by a hard mass, situated chiefly behind the cervix, and pressing both on this and on the sigmoid flexure. The fundus of the uterus could not be recognised, and a bimanual examination was impossible, owing to the abdominal distension. The rectum was loaded.

Diagnosis.—The pulse and temperature, combined with the board-like hardness of the vaginal roof, led to the conclusion that the case was one of pelvic cellulitis; and it appeared that the pressure of inflammatory products had led to intestinal obstruction by compression of the sigmoid flexure. On the other hand, the three months' amenorrhœa, the softness of the cervix, and the mammary secretion suggested pregnancy, and it was thought that the cellulitis might be complicated by retroversion of the gravid uterus increasing the pressure effects. The possibility of extra-uterine gestation *plus* pelvic inflammation was considered, but the evidence for this seemed insufficient, and the mass behind the uterus was so large and firm, and the bulk of it so centred round the median line, that it was regarded as improbable.

Course and treatment.—A liquid diet was ordered, and the rectum cleared by enemata. When this was done the abdominal distension was not diminished. For a few days there was a thin offensive diarrhœa, and on September 14th the stomach was washed out. For some days the temperature remained at about 101° F., but on September 17th it rose to 103°. With the idea that there might be retroversion of the gravid uterus, the patient was placed under ether narcosis, and an attempt was made to push up the mass behind the cervix. This was entirely unsuccessful, and a long rectal tube was therefore

introduced, and passed up beyond the brim of the pelvis. A good deal of flatus escaped, and the abdomen became softer and less distended. The tube was left in for twenty-four hours, and was then removed, as it caused the patient inconvenience. Severe pains like labour pains then came on, but there was no vaginal discharge. For a day or two flatus was freely passed by mouth and rectum.

The general condition did not, however, improve, and the temperature continued high. A consultation was therefore held with our colleagues, Mr. Bland Sutton and Dr. Eden, to consider the propriety of interference by abdominal section. But it was agreed that the general condition was so bad that she would not bear the shock, and would probably die on the table.

On September 24th it was decided that if the uterus were gravid, it would give the patient the best chance of recovery to empty it. A sound was therefore passed ; it took a forward direction, close behind the symphysis, and passed three inches. The uterus was empty. This threw us back on the diagnosis of extra-uterine gestation with pelvic inflammation. The patient remained, however, in too grave a condition to allow of operative interference. The next day the distension was greater, breathing was laboured, and the face was cyanosed. She rapidly became worse, and died at 12.30 p.m.

A post-mortem examination was made, the report of which will follow the remarks on the clinical features of this and of the succeeding case.

From the clinical side this case presents several points of great interest, viz.—

1. The difficulty in diagnosis.

2. The situation of the gestation sac, which occupied a median position in the pouch of Douglas.

3. The pressure capable of being exercised by a tubal gestation on surrounding structures.

4. The illustration which it affords of a possible course of tubal gestation when not interfered with by operation.

The first three points are so strikingly illustrated by

another case, under the care of one of us at about the same time, that it will be instructive to briefly record it. We have to thank Dr. William Duncan for kind permission to do so.

Case 2.—E. L—, aged 26, married, was sent to Dr. Giles at the Middlesex Hospital on August 28th, 1895, when he was taking temporary duty for Dr. Duncan and Dr. Boxall, by Dr. Waring Robinson of East Dulwich. She complained of inability to pass water. By the catheter a large quantity was drawn off, and it was then found, on vaginal examination, that the cervix was pressed forwards against the pubes by a firm semi-elastic mass occupying the pouch of Douglas. The cervix was soft and semi-patulous. A provisional diagnosis of retroversion of the gravid uterus was made, and she was sent into the Prudhoe Ward, when she gave the following history.

Menstruation began at sixteen, regular with a four weeks' rhythm ; not excessive, lasting four days ; no pain. *Married* at eighteen, she had had two children, and one miscarriage just twelve months ago (August 29th, 1894).

Present illness.—Patient stated that she had been regular till July 31st, when she had a slight show for one day. On August 5th there was again some discharge of blood, and since then till her admission there had been a coloured discharge daily. On August 26th she was unable to pass water. Dr. Robinson ordered fomentations to the abdomen, which had the desired effect. For two days she had great pain and could not walk, but felt better when resting. On August 28th she again suffered from retention, and Dr. Robinson sent her up to the Middlesex Hospital.

On admission patient looked ill, and complained of supra-pubic pain. Temperature 100° F. Vaginal examination showed the condition above described as found in the out-patient department; the mass seemed to block up the pelvic cavity, and beyond the cervix no differentiation of parts could be made out.

The signs of pregnancy were not unequivocal; the case was thought to be one either of retroversion of the gravid uterus, or of uterine myoma with congestion.

Course and treatment.—The next day an examination was made under ether to determine the possibility of pushing up the mass out of the pelvis. It presented slight mobility, and being partially raised, a ring was inserted to keep it so. The following morning patient was able to pass water naturally, and felt much better. Three days later the congestion had largely abated, and it was possible to feel the uterus itself separate from the tumour. The fundus was over the pubes, and was not appreciably enlarged. The semi-solid mass felt closely connected with the back of the uterus; it varied in consistency in different parts, and was slightly tender.

September 14th.—A firm oblong swelling could be felt above the pubes, and was thought to be the fundus of the uterus; on each side was a soft, semi-elastic swelling, dull on percussion, and more marked on the right side. The vaginal condition was unaltered.

September 28th.—Patient comfortable while lying in bed; a brownish-red vaginal discharge had been present continuously since admission, but now ceased.

October 10th.—Patient was examined under ether by Dr. Duncan; the condition was the same as on September 14th. A week later she got up for the first time. For three weeks more the condition remained the same, and abdominal section was then advised and consented to.

November 8th.—Laparotomy was performed by Dr. Duncan nine weeks after admission. The pouch of Douglas was found to be occupied by the sac of a ruptured tubal gestation of the right side. The mass was firmly bound down to the floor of the pelvis, and the rest of the structures were matted together. After separation of the adhesions the sac was removed with a large quantity of blood-clot. The appendages of the left side were found to be extensively diseased, and were also removed. The

pelvis was sponged out, a glass drainage-tube inserted, and the abdominal wound closed.

Convalescence was satisfactory with the exception of a febrile temperature from the sixth to the thirteenth day after operation. The wound healed by first intention. The patient went home well on December 31st.

It will be seen that except in their terminations these two cases present a fairly close parallel.

With regard to the diagnosis, it is important to recognise from these cases that a tubal gestation may be accompanied by other than the classical signs and symptoms. The typical picture of tubal gestation is as follows:

A patient who has not recently been pregnant, and whose menstruation has been regular, misses a period, perhaps two; she has no sickness, and probably does not think she is pregnant. She is seized one day, after some exertion, with severe one-sided pain, and feels faint or even becomes collapsed. From this she rallies, and has a second attack after two or three weeks. Meanwhile she has a brownish-red vaginal discharge, dating from the first attack. If examined before or soon after the first attack a swelling is felt to one side of the uterus in the position of the tube; it is tense, elongated, and in the vaginal fornix under it is felt a marked pulsation of the vessels. If examined later the swelling is larger, but may be less defined if there has been outpouring of blood into the broad ligament or the pouch of Douglas.

In the case of Mrs. F— we have the history of missed periods and of two attacks of pain and vomiting, and there was milk in the breasts. The diagnosis of pregnancy was fairly clear, but except for the second point it might just as well have been intra-uterine. The case differed from the above outlined picture in that there was no brown or red vaginal discharge, and there was no lateral swelling on examination; on the contrary, the swelling was median and hard, and extensive enough to cause a relative intestinal obstruction. Further, the tem-

perature chart was much more suggestive of pelvic cellulitis than of tubal gestation.

In the Middlesex case no period was missed altogether, but the period which occurred one month before her admission was represented by a "show" lasting only one day; and a week later a reddish discharge continued daily. This history is consistent with, though not typical of, tubal gestation. She had no history of sudden attacks of pain, the first symptom that called attention to her condition being retention of urine. This obstructive pressure, on the urethra, in this case, and on the bowel in the first case, is quite unlike what one usually expects from tubal gestation; we have only found the record of one parallel case, viz. one recorded by Dr. Godson ('Proc. Med. Soc. Lond.,' vol. vii, p. 390) and quoted by Bland Sutton ('Surgical Diseases of the Ovaries and Fallopian Tubes,' 2nd edit., p. 307); in that case, as in both of ours, an attempt was made to push up the mass behind the cervix, under the impression that the condition was one of retroversion of the gravid uterus. The Middlesex case also differed from the typical picture of tubal gestation in that the swelling was not lateral, but median, behind the uterus. The question suggests itself whether in these cases the Fallopian tube was in a faulty position at the time that pregnancy began in it. Otherwise it is only in the later stages that the gestation sac could come to occupy a median position in the pouch of Douglas.

Lastly, we have presented to us an aspect of the "natural history" of tubal gestation when not interfered with by operation. Usually, when a fatal result occurs, it is from internal hæmorrhage and collapse; in the case of Mrs. F— it was due, properly speaking, to chronic intestinal obstruction with febrile disturbance. It is probable that a similar disastrous result would have followed in the case of Mrs. L— had not operative interference been resorted to.

The practical deductions to be drawn from these cases are, firstly, that a pelvic tumour which differs in signs

and symptoms from classical types should not be treated by the expectant method, but should be dealt with surgically as soon as possible; secondly, that if a tubal gestation can be diagnosed before rupture takes place, the possible train of disasters will be best averted by immediate operation.

Pathological report.—Mrs. F—, aged 38. Post-mortem examination seven hours after death, and limited to abdomen. The abdomen is much distended. The intestines, both small and large, are moderately gas-filled. The parietal peritoneum is everywhere thickened, and mostly of grey-blue colour in the flanks and iliac regions, being, in common with many of those coils of intestine which are below the level of the umbilicus, coated with bluish-black lymph. Whilst there is no uncoagulated blood in the general peritoneal cavity, a recently formed clot of walnut size is found lying loose near the sigmoid flexure. Above the true pelvis there is no evidence of hæmorrhage into the intestinal lumen, and no important ulceration of its mucosa is detected.

The liver and spleen are fixed by old adhesions. The kidneys, ureters, and pancreas are normal.

The true pelvis is mainly roofed in by a thick layer of inflammatory lymph of blue-black colour; its cavity is tightly packed by the presence of an ectopic pregnancy of the left tube.

The relation of parts is as follows:—The uterus is pushed to the right front of the pelvis; the ectopic gestation sac of the left tube has developed in the posterior pelvis and hollow of sacrum, the left ovary being thus sandwiched between the sac and the left posterior surface of the uterus. The right tube, terminating in a fluctuating swelling, is also bent backwards, and the corresponding ovary is compressed between the swelling and the right posterior surface of the uterus.

Thus the parts which are seen to present above the level of the true pelvic brim are the fundus uteri, the proximal portion of the left tube leading to the upper

surface of the gestation sac, and the proximal portion of the right tube leading to the upper surface of its terminal cystic dilatation.

The following is the more detailed description of the parts.

Left appendages.—Tube : the proximal portion between the fundus uteri and the gestation sac is 6 cm. in length, with a calibre of lead-pencil size, where it becomes joined to the sac, and diminishing in bulk as it runs towards the fundus uteri. The ampullary portion and fimbriated end are involved in the formation of the gestation sac; the individual fimbriæ are not traceable.

The gestation sac is of ovoid form, 12 × 9 cm., with thick placental tissue superiorly and posteriorly, and all its surfaces, excepting the superior, show adhesion shredding. At a point in the upper posterior portion of the sac wall there is a small, irregular, and crudely valvular opening, from which fluid blood issues. The thinnest portion of the wall is on its left posterior aspect, and here the amnion with its contained fluid is felt as a fluctuating cyst. On opening the cavity two and a half ounces of slightly blood-stained amniotic fluid escaped, and a well-formed fœtus, 12 cm. in length, was found attached by a somewhat thinned umbilical cord, 12 cm. in length, quite close to the margin of the lowermost portion of the placenta. The thickest portion of the placental tissue is at and around its centre, where the average depth is 5 cm.

The *mesosalpinx* is partially obliterated, and everywhere much thickened by the inflammatory process.

The *ovary* is much contorted by its compression between the uterus and sac. No abnormality of structure is evident to the naked eye, and there is no corpus luteum corresponding to the pregnancy.

Right appendages.—Tube : a proximal portion, 4 cm. in length, is of average calibre. This intervenes between the fundus uteri and the distal portion of the tube, which latter is dilated and distended into a thin-walled fluctuating sac of hen's-egg size and shape; the position of this

sac corresponds to that of the gestation sac on the left side. On incision, chocolate-coloured fluid and partially clotted blood escape, and it is then seen that at either pole of the sac there is a considerable amount of soft, spongy, blood-filled tissue, presenting many of the naked-eye appearances of placental structure. The tube is sealed at its outer end, though traces of fimbriæ are readily detected.

The *mesosalpinx* is almost obliterated, and is much thickened by the inflammatory process.

The *ovary* is somewhat small, and much compressed; it contains a recently ruptured follicle and a well-marked corpus luteum, decolourised, and measuring $\frac{1}{2} \times \frac{1}{4}$ inch.

The *uterus* is elongated, but not bulky; external measurements, 9 × 5 cm.; the cavity of the corpus contains some recently clotted blood, and the mucosa is soft and turgid.

Remarks.—Amongst the points of interest presented by the pathological examination of the case the following may be mentioned:

(*a*) The fœtus, though ectopic and with a marginally inserted cord, is perfect. This fact is doubtless importantly associated with the ample amount of liquor amnii found in the sac.

(*b*) The concurrence of the hæmatosalpinx on the non-pregnant side recalls the fact that a similar condition has not unfrequently been observed and recorded. We hesitate to assert an opinion as to the significance of the association. The microscopic appearances of this portion of the right tube are sufficiently removed from those which we would regard as indicating a decidual alteration, as to warrant the negation of the hæmatosalpinx being a demonstration of "genetic sympathy" with the tube of the left side. Neither does the condition of the portion of the right tube intervening between the uterus and the hæmatosalpinx support the suggestion that the associated hæmorrhage into the non-pregnant tube may be due to regurgitation of blood from the uterine cavity.

The actual microscopic appearances, particularly those of the sections of altered mucosal fronds, render it easy to conceive that similar cases may have been recorded as instances of bilateral ectopic gestation.

(*c*) The microscopical appearances of the proximal portions of both tubes are certainly altered from the normal. The changes may be taken as representing the effects of an inflammatory process of a mild type.

Dr. PETER HORROCKS considered that it would have been better to have operated on the case which afterwards proved fatal. No doubt it was a difficult point to decide, but he considered it a good rule that when in doubt it was better to operate. This rule was indeed more firmly established now that we had better weapons, such as saline injection, to deal with collapse, and also a more perfect system of asepsis, which rendered operations, *per se*, comparatively harmless. He asked, what was the cause of death? Was it hæmorrhage? and if not, was there any clotting or embolism? He also pointed out that the uterus was only three inches long, though it seemed longer after being in spirit. Obviously from the size of the fœtus the uterus had either not increased in size as was usual, or else the fœtus had died, and involution to some extent had taken place. He inclined to the latter view.

Dr. MAIDLOW remarked that the history of the physical signs pointed to pelvic peritonitis, and not cellulitis, a fact which with the signs of pregnancy he thought might have suggested ectopic gestation. Moreover symptoms of intestinal obstruction of any severity were in his experience very rarely associated with retroversion of the gravid uterus. Consequently he thought pelvic peritonitis, pregnancy, and intestinal obstruction pointed distinctly in the direction of ectopic gestation.

Dr. DRUMMOND ROBINSON asked why Dr. Giles had considered that the case he had recorded might possibly have been one of cellulitis. He thought that the physical characters presented by the case suggested peritonitis rather than cellulitis. He also drew attention to the fact that a history of injury was absent—a point against the diagnosis of cellulitis.

Dr. GALABIN asked whether Dr. Giles thought that the extra-uterine sac in the specimen shown consisted of Fallopian tube only, or that primary rupture had taken place into the broad ligament, and the case had reached the stage of early intra-ligamentous pregnancy. He had met with several cases in which extra-uterine fœtations simulated a retroflexed gravid uterus, and caused some retention of urine; but he thought

that this hardly occurred at the stage of purely tubal fœtation, but rather when the case had become intra-ligamentous or abdominal. In Dr. Giles's case the sac appeared to him too large to be purely tubal. He remembered a case many years ago which was mistaken in the fourth month for a retroflexed gravid uterus. The patient went to full term, and eventually died after operation, the sac being probably intra-ligamentous. In a case now in Guy's Hospital a similar diagnosis had been made, and an attempt made, as was thought with success, to push up the supposed fundus out of the pelvis. Dr. Galabin diagnosed extra-uterine fœtation, and operated with a successful result, the sac proving to be intra-ligamentous.

Dr. ARTHUR GILES, in reply, said that he quite agreed with Dr. Horrocks's rule, "when in doubt operate." In the first case, however, the patient's condition was so bad that it seemed impossible that she could stand operation. The cause of death was intestinal obstruction and collapse. His reason for regarding the case as one of pelvic cellulitis rather than peritonitis was that in the first place there was at the time no reason to suppose that the appendages were affected, and he was in the habit of associating pelvic peritonitis with tubal mischief; in the second place, the board-like hardness of the vaginal roof was much more suggestive of cellulitis than peritonitis. The two conditions were, of course, generally both present in some measure. He was very interested in the cases related by Dr. Galabin. In answer to Dr. Galabin's question, the gestation sac was formed by the dilated tube rather than by the broad ligament; the amniotic cavity was intact, and the fœtus, which evidently died at the same time as the mother, was floating freely in about 3 oz. of amniotic fluid. There was already a small point of rupture at one part of the tube, and no doubt this would have become larger before very long.

A CASE OF PRIMARY SARCOMA OF THE BODY OF THE UTERUS ("DECIDUOMA MALIGNUM") IN A PATIENT TWENTY-FOUR YEARS OF AGE, TREATED BY VAGINAL HYSTERECTOMY.

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OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

(Received June 9th, 1897.)

(*Abstract.*)

THE patient was twenty-four years old, she had been married a year, and believed that she had had three miscarriages at two months, six weeks, and three weeks respectively. She came under observation on account of persistent metrorrhagia, dating from the time of the first supposed miscarriage, about eight months previously. The case on admission was at first supposed to be one of incomplete abortion, but after dilatation of the cervix, examination showed that the symptoms were due to a malignant growth in the body of the uterus. Vaginal hysterectomy was performed on February 11th, 1897. The patient recovered well after the operation, and was free from any sign of recurrence in May last.

Sections of the growth were prepared and examined by Mr. Targett, and also examined by Dr. Eden. Their report accompanies the paper. They considered the growth to be a sarcoma, and regarded it as essentially identical with what has been described under the name "deciduoma malignum." Mr. Bland Sutton and Dr. Herbert Spencer also examined the sections, and came to the same conclusion.

The author examines the evidence as to the patient having ever been pregnant at all. While admitting the impossibility of

proving she had never been pregnant, he considers that, having especial regard to the fact that menstruation had never been regular, there is some probability that conception had never occurred.

E. W—, a married woman aged 24, was admitted under my care into the London Hospital on the 19th December, 1896, complaining of pain in the lower part of the back—bearing-down pain—and a constant red discharge from the vagina since a supposed miscarriage nine weeks previously.

Previous history.—She has been subject to a cough since she was fifteen years of age, and has attended Victoria Park Hospital. She says her left lung is "affected." She had smallpox eight years ago, and since then has been slightly deaf. She has been married twelve months, and thinks that she has had three miscarriages. *The first miscarriage* was in April, 1896, when she believed herself to have been two months pregnant; *the second miscarriage* was in August, 1896, when she thought herself to be five or six weeks pregnant; and *the third miscarriage* was nine weeks previous to her admission into the hospital: she thought herself about three weeks pregnant when this miscarriage occurred.

Menstrual history.—The catamenia began when she was ten years old. She then "saw nothing" for ten months, and was very irregular up to the time of her marriage, there being often intervals of two, three, or four months between the periods. The periods were scanty, and attended with pain in the hypogastric region and back. She sometimes had to remain in bed at these times. There has been no trouble as regards micturition. The bowels are generally constipated, and the appetite is bad.

Family history.—Her father is alive. All the family are said to have suffered from "weak chests."

History of the present illness.—The patient says she has had a red vaginal discharge ever since the first miscarriage, which occurred, as already mentioned, in April, 1896. This discharge was more profuse when she was up

and about. She has also had more or less pain in the lower part of the back and abdomen, and bearing-down pain since the first miscarriage. In the last supposed miscarriage (when she thought herself to be three weeks pregnant) she was attended by a doctor; "a small piece of flesh came away" on this occasion. I inquired carefully as to what her reasons had been for considering herself pregnant before each of the supposed miscarriages. She said it was because she had "seen nothing" before each of them. This may be taken in conjunction with her statement that there had been a constant red vaginal discharge since the first miscarriage. It looks rather as if there really had been a constant red *discharge* since the first supposed miscarriage, but that she regarded the slightly blood-stained discharge as of no importance, and as equivalent to amenorrhœa; and further, when there was a more profuse loss, it seems extremely probable that she regarded this as due to a miscarriage. In each of the three supposed miscarriages the pregnancy was only of very short duration—two months, six weeks, and three weeks.

At the time of her admission to the hospital the case was supposed to be an ordinary one of metrorrhagia, due to an incomplete abortion.

State on admission.—On abdominal examination nothing abnormal could be felt.

On vaginal examination recent blood was seen about the external parts and in the vagina. The os uteri was not patulous, fresh blood was seen in it. The uterus was freely moveable, in the normal position, and evidently somewhat enlarged.

On December 20th, 1896, two specially prepared laminaria tents were inserted into the cervix, and at 3.30 p.m. on the following day the dilatation of the cervix was completed with Hegar's dilators under anæsthesia.

The finger was then passed into the uterus, and near the fundus came upon a projecting mass about the size of a walnut, part of which was easily detached. The mass

was situated on the posterior wall near the fundus, and to the right side. Most of this mass was easily detached with the finger, but there was no line of demarcation between the mass and the underlying wall of the uterus. As successive portions of the mass were scraped away, the finger kept going more and more deeply into the substance of the uterine wall, so that the condition was altogether unlike that found in ordinary cases of incomplete abortion.

I have on one other occasion met with a condition in this respect resembling that found in the present instance. The case I refer to was one of hydatidiform mole. The bulk of it had come away spontaneously, but some weeks afterwards the interior of the uterus was explored on account of a persistent metrorrhagia. Portions of the hydatidiform mole were then felt projecting at the fundus, and were easily removed, but the finger did not come down on firm healthy uterine wall. As more and more of the separable material was detached the finger kept getting more and more deeply into the wall of the uterus, till it was very nearly if not quite in contact with the peritoneal coat. In this case of hydatidiform mole, although I felt doubtful whether the whole of the mole had been removed, the patient ultimately made a satisfactory recovery without further interference.

To return to the present case (E. W—), pure tincture of iodine was applied to the whole of the endometrium ; the uterus was washed out with iodine water, and a strip of iodoform gauze was left in the vagina. This was removed on the following day. The temperature subsequent to the dilatation did not rise above normal, but the red discharge persisted more or less during the patient's stay in the hospital on this first occasion, although she was constantly taking ergot, and having hot vaginal douches. She went out on January 4th, 1897. At that time her weight was 6 st. 7 lbs.

Readmission.—She was readmitted on the 13th of January, 1897, as the metrorrhagia had persisted, and

there had been two floodings during the few days she was at home. On one occasion it was said that half a chamberful of blood with clots was lost.

State on January 21st, 1897.—The patient was not markedly anæmic. On examining the abdomen nothing abnormal could be felt. On vaginal examination there was a little blood seen about the vaginal orifice, and the uterus was found to be enlarged to about the size of the pregnant uterus at seven or eight weeks. It was freely moveable and soft. She was treated with hot vaginal douches, and took three grains of ergotin three times a day up till the 29th inst. During this time there was no improvement. She suffered from a good deal of pain at the lower abdomen, from backache, and pain down the left leg as far as the knee, and the red discharge continued.

On the 30th of January the cervix was again dilated, and the following note was made as to the condition of the endometrium :—Tracing the anterior wall of the uterus from left to right with the finger in the uterus, it is found to be smooth. The posterior surface similarly traced is smooth on the left side and at the lower part. A convex projection is felt about an inch above the internal os uteri; the surface of the endometrium over it is smooth. Higher up near the fundus the surface of the posterior wall is rough, and proceeding to the right the finger comes to an edge beyond which there is an irregular chasm, on the floor of which several brittle irregular projections are felt. Some of these are easily broken away with the finger. Bimanually, when the finger is on the floor of this chasm there seems to be little of the uterus except the peritoneal coat between the fingers at the time of this examination. I said to those present that if it were not for the patient's age (twenty-four) I should have no doubt that the case was one of carcinoma of the body of the uterus. As it was, I felt sure the condition was due to a malignant growth, and that it seemed to have considerable resemblance to those cases that have been described under

the name of "deciduoma malignum." I advised the patient to have the uterus removed.

Operation (*vaginal hysterectomy*) (February 11th, 1897).—The patient was anæsthetised with ether and placed in the lithotomy position. Vaginal hysterectomy was then performed, the principal steps of the operation being as follows. The anterior fornix was first incised and the bladder separated as high as the internal os. Then the posterior fornix was incised, and the cervix cleared to the same height. The anterior and posterior transverse incisions were then joined by lateral incisions, bleeding vessels being secured with pressure forceps. Douglas's pouch was then opened, and then the vesico-uterine pouch of peritoneum. The broad ligaments were secured with pressure forceps and divided. The left side of the uterus was freed first, the uterus was then "delivered" into the vagina, and then the right broad ligament was secured and divided. The uterus was then removed. Iodoform gauze was packed into the vagina; the upper part of the gauze projected into Douglas's pouch. The patient made an uninterrupted recovery. This was the twenty-ninth occasion on which I have performed vaginal hysterectomy for malignant disease of the uterus. There have been three deaths in this series; the last of these was in the eighteenth case: since that case the eleven patients on whom I have performed vaginal hysterectomy for cancer have all recovered.

As regards this patient's progress after the operation, I may mention that the pressure forceps were removed on the fourth day; the temperature on that day reached 101°, the highest temperature reached during the whole period subsequent to the operation. After the tenth day it never rose above 99·2°.

March 15th, 1897.—She was examined on this day, and at the top of the vagina there was seen a healthy granulating surface the size of a sixpence. She went home the next day.

Since she left the hospital she has been up several

times to see me. I examined her on one occasion, and found the scar at the top of the vagina quite sound. There has been no discharge of any kind since the operation wound healed.

My colleague, Dr. Percy Kidd, kindly examined her chest for me in May. He found no evidence of anything wrong with the lungs.

Note on the Specimen.

Naked-eye appearances.—The uterus is laid open along the anterior surface. The extreme vertical measurement of the uterus is $4\frac{3}{4}$ inches.

The anterior wall of the uterus in the neighbourhood of the growth is nearly 1 inch thick.

The cervical canal and the lower half of the cavity of the uterus appear normal.

The fundus, and the posterior wall of the body of the uterus in its upper half, are the parts affected by the growth.

The posterior surface of the endometrium in its upper half is pushed forwards by the growth so as to form a convex projection towards the cavity of the uterus. As regards the lower half or so of this projection, its surface towards the endometrium is fairly smooth, but at its upper part there is an irregular cavity into which the finger passed, as described in the course of the clinical examination. Here the tissues are sloughing and offensive. A sagittal section was made through the posterior wall of the uterus from the fundus to the level of the internal os. From before back the thickness of the posterior wall of the uterus near the fundus is found to be $1\frac{5}{8}$ inches. The cut surface of the posterior wall shows that the growth involves nearly the whole thickness of the wall of the uterus at this level. The colour of the growth (in the recent state) is a deep red. The surface of the section to the naked eye shows that the growth is composed of a main portion, roughly speaking, the size of a walnut, from

DESCRIPTION OF PLATE III,

Illustrating Dr. Lewers's paper on Primary Sarcoma of the Body of the Uterus (Deciduoma Malignum).

Drawing of the uterus removed by vaginal hysterectomy in the case of Edith W—. The growth is seen at the fundus.

Adlard, imp.

which offshoots spread backwards and downwards into the thickness of the uterine wall. Some of the deeper portions of the growth take the form of somewhat circular nodules of a deep red colour varying in size. One, for example, the size of a pea is seen (on the left half of the cut posterior wall) almost touching the peritoneum. It is apparently isolated from the adjoining part of the growth. At a distance of half an inch from the lowest part of the growth there is a subperitoneal fibroid ($\frac{7}{8} \times \frac{1}{2}$ inch) in the posterior wall of the uterus.

Minute structure of the growth.—I sent several portions of the growth to the Clinical Research Association. Mr. Targett examined the sections; and Dr. Eden, at Mr. Targett's suggestion, very kindly examined them also. They have embodied their views in a joint report, which accompanies this paper. The drawings of the sections were made at the offices of the Clinical Research Association, under Mr. Targett's direction. The joint report is as follows.

Report on Dr. Lewers's Specimen of Malignant Disease of Uterus (Edith W—).

Microscopical examination.—Portions of tissue were taken from (*a*) growing margin of tumour; (*b*) nodule projecting into uterus; (*c*) mucous lining of uterus near cervix and away from the disease.

Margin of growth.—Sections from this part show a rounded nodule of new growth embedded in the muscular substance of the uterus. The uterine tissue, at some distance from the new growth, exhibits much congestion of the vessels and inflammatory changes, with rows of small cells infiltrating the muscular bundles as in acute metritis. On approaching the nodule of growth the inflammatory exudation becomes more abundant, and the muscular tissue is absorbed or obscured.

The nodule of growth presents for examination the following elements:

(1) Strands and irregular masses of cells, stained red.
(2) Smaller cells with round nuclei, stained blue.
(3) Groups of inflammatory cells.
(4) Large extravasations of blood.

The growth is not truly alveolated, but by means of the strands or trabeculæ of large (red) cells the smaller (blue) elements are imperfectly grouped into rounded areas of various sizes.

Under a higher power it is seen that these strands or trabeculæ consist of nucleated masses of protoplasm, which have stained red with orcein, and for the purposes of description may be called "plasmodial masses." They vary considerably in shape and general appearance; some form polyhedral masses with large round nuclei; others resemble strands of closely packed spindle-shaped cells, with oval and even much elongated nuclei. But whatever their shape, it may be said that the plasmodial masses have these features in common: they are composed of granular protoplasm, in which no distinction between the outlines of the component cells can be recognised; they are provided with large vesicular nuclei, which in places are very numerous; the perinuclear protoplasm presents numerous vacuoles, and they exhibit certain staining reactions by which they are distinguishable from the second class of cells above mentioned.

These smaller cells, stained blue with hæmatoxylin, have the characters of sarcomatous cells. Their outlines, though not very distinct, are for the most part rounded, and they possess round nuclei, which are very uniform in size, but considerably smaller than those of the plasmodial masses. Where the sarcomatous cells lie in contact with the plasmodial masses, threads of the latter tissue can be traced for some distance between the cells, thus forming an intercellular network, which has stained red like the plasmodia.

Nodule projecting into uterus.—Sections from this portion of the growth are characterised by extensive extravasations of blood, which have broken up the neo-

Two Microscopic sections showing the plasmodical masses (Syncytium) and the large multinucleated cells, from Dr. Lewers' case of Primary *Sarcoma* of the Body of the Uterus (Deciduoma *Malignum*).

Bale, Danielsson.

plastic tissue, and more widely diffused inflammatory exudation. In its minute structure the new growth resembles that already described, but the plasmodial masses seem in greater abundance than the sarcomatous tissue.

Mucous lining of uterus.—A portion of the uterine wall at some distance from the growth has an imperfect lining of epithelium, possibly the effect of a previous curetting. But there are no morbid appearances in the glandular follicles, nor in the cellular tissue of the endometrium.

The tumour may be described as a soft rapidly growing sarcoma, which is associated with much surrounding inflammatory change and large extravasations of blood. Histologically it is noteworthy in the possession of many nucleated plasmodia, which, though more abundant, do not materially differ from the protoplasmic masses found in many soft sarcomata of rapid growth occurring in other parts of the body than the uterus.

T. W. Eden.
J. H. Targett.

May 26th, 1897.

I may add that Dr. Herbert Spencer and Mr. Bland Sutton have seen sections of the growth, and expressed the opinion that it was of the same nature as that described under the name of "deciduoma malignum." Under these circumstances an important question arises as to what is the evidence that the patient was ever pregnant at all.

I am bound to say that it seems to me that the evidence is very slight. She had only been married twelve months, and in that time thought she had had three miscarriages. But in each instance the pregnancy when the supposed miscarriage took place was of very short duration; in the first case only of two months, in the second case of five or six weeks, and in the third case of only three weeks. It is well known how commonly a menstrual period or two may be missed in the newly married without the occurrence of pregnancy, and the only ground on which this

patient thought herself pregnant on these three occasions was because she had "gone over her time."

Again, although missing a period is generally perhaps to be taken as giving a fair presumption of pregnancy in a healthy married woman, this is only true in a patient who has been habitually regular. Now in the present case the patient had always been irregular till the date of her marriage. There had often been intervals of two, three, and four months between the menstrual periods. It really seems, therefore, that in her case to assume pregnancy because she was slightly over her time would most probably be incorrect. I do not think we can go further than this, that on the facts it is extremely probable that the woman was never pregnant at all. Another point telling in the same direction has been already alluded to in giving the history of the case. She said her illness dated from the time of the first miscarriage, and that she had had a constant red vaginal discharge since then. On the other hand, as regards the supposed second and third miscarriages, being asked why she thought they were miscarriages, she said she had gone over her time without "seeing anything." I think the discrepancy may probably be explained in this way, that she had actually a slight blood-stained discharge ever since the date of the supposed first miscarriage, and that she looked upon this discharge when it was slight as the same thing as amenorrhœa. In this way she would have been misled into supposing herself pregnant on the second and third occasions. When a more severe loss of blood occurred she regarded this as a miscarriage. The presence of a fibroid in the uterus also tells somewhat against the view that the patient had been pregnant. On the whole, therefore, it seems most likely that the case is one of a malignant (sarcomatous) growth of the body of the uterus, practically identical in appearance and histological characters with that described under the name of "deciduoma malignum," occurring in a woman twenty-four years of age, who had in all probability never been pregnant.

It does, on general grounds, appear to me somewhat unlikely that if there were a *causal* instead of an accidental relation between pregnancy and the growth generally known as "deciduoma malignum," cases of the kind should be so exceedingly rare.

During the whole time I have been on the staff at the London Hospital, now a period of over twelve years, I have only had two cases of sarcoma of the body of the uterus under my care. One is the case recorded in the present paper; the other occurred in 1885, and was recorded in vol. xxviii of the Society's 'Transactions,' p. 78. I referred to that case in the discussion that took place on deciduoma malignum last year, and a drawing of the uterus is shown opposite p. 178 of vol. xxxviii of the Society's 'Transactions.' In that case there were circumscribed sarcomatous growths in the body of the uterus, and one partly in the body and partly in the cervix. There were also numerous secondary nodules in the lungs, and two in the vagina; so that it presented many features in common with some of the cases described as deciduoma malignum. But that case occurred in a patient fifty years old, who had not had any pregnancy for eleven years. I have seen one other case where the rapid formation of secondary nodules in the vagina while the patient was under observation led me to think that the uterine mischief from which the patient was suffering was probably sarcoma of the body; but, as no post-mortem examination was allowed, I cannot produce absolute proof that such was the case.

Dr. Galabin asked Dr. Lewers whether, in the case of sarcoma of the uterus at the age of fifty which he had mentioned, plasmodial masses, or so-called syncytium, were present. There were several varieties of histological structure recorded in cases of so-called deciduoma malignum; but Dr. Galabin was inclined to think that one of them was characteristic, that in which there were processes of syncytium tending to form a network, as in Dr. Lewers's specimen. He was not aware that this had been yet shown to occur in the uterus in cases in which recent pregnancy could, with reasonable certainty, be excluded. It

was unfortunate that, in Dr. Lewers's case, the question of pregnancy could not be settled one way or the other. He did not think it afforded any evidence that the disease occurred apart from pregnancy, since, although Dr. Lewers concluded that the patient had probably not been pregnant, yet her ailment commenced with two months' amenorrhœa, followed by unusual hæmorrhage, and she herself thought that she had miscarried.

Dr. EDEN said that the question of the connection of these growths with pregnancy was the point upon which the whole theory of deciduoma malignum was established. If it could be shown that the disease had occurred in women who had never conceived, then the theory must be abandoned. But nothing could be more difficult than the absolute exclusion of pregnancy by scientific proof in any woman, and in women whose menstruation was irregular it became quite impossible. It was obviously unfair, however, to argue that every woman might be assumed to have been pregnant unless the contrary could be proved; but direct evidence of pregnancy being so much more easily obtained, they were justified in asking that in these cases the positive evidence of pregnancy should be conclusive. In Dr. Lewers's case he thought there could be no reasonable doubt that the woman had never been pregnant at all, although in the nature of things absolute proof of this was impossible. Two other cases of deciduoma malignum had been recorded in which the evidence of pregnancy was equally wanting. Too often Continental writers paid little attention to this point, the common line of argument being that because the patient suffered from this disease she must therefore have been pregnant; but this was assuming the very point which they wished to prove. It could not be too strongly emphasised that irregular hæmorrhages occurring in women who were the subjects of malignant disease of the uterus were no proof of abortion.

OCTOBER 6TH, 1897.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Present—32 Fellows and 1 visitor.

Books were presented by Mr. Bland Sutton, Drs. Giles, John Phillips, Cleveland, and Currier, the Middlesex Hospital Staff, the Editor of the 'Revue de Gynécologie et de Chirurgie Abdominale,' and the 'Société des Sciences Médicales de Lyon.'

William Bain, M.D.Durh., was elected a Fellow of the Society.

The following gentlemen were proposed for election:—George Edward Twynam, L.R,C.P.Lond.; Guy Bertram Hollings, M.B., B.S.; James Robert Wallace, M.D.Edin. (Calcutta); Charles Westbrooke Grant-Wilson, L.R.C.P. Lond.; Byramzi Hormasji Nanavatty, L.M.&S.Bombay (Ahmedabad); Courtenay Charles Weeks, L.R.C.P.Lond. (Pinchbeck); and Edward Fluder Chinery, M.R.C.S. (Lymington).

ABORTED OVUM.

Shown by Dr. ROBERT WISE.

PREGNANT HORN FROM THE UTERUS OF A CAT.

Shown by Dr. Robert Wise.

A CASE OF RUPTURED UTERUS TREATED BY ABDOMINAL HYSTERECTOMY.

By Dr. John Phillips.

Mrs. A—, aged 32, married, had been pregnant seven times, labour having occurred five times at full term and twice prematurely (sixth and seventh months). The first labour was normal, the second complicated by an adherent placenta and post-partum hæmorrhage. The patient considered herself to be between six and seven months pregnant. Labour began on October 3rd, 1897, at 5 p.m. An examination made at 7.45 p.m. showed a fœtal foot lying in the vagina. On tracing it up, the os uteri externum proved to be the size of a two-shilling piece, soft and dilatable; the internal os uteri was found tightly grasping the knee. Pains continued with fair regularity until 11 p.m., when examination showed very slight progress. Under an anæsthetic the constricted internal os uteri was dilated and the other foot brought down. At midnight the natural efforts had sufficed to expel the child as far as the neck, the head being retained *in utero*, the neck grasped by the constricting band already mentioned (internal os uteri, or ring of Bandl).

October 4th.—12.45 a.m., the patient was anæsthetised and the hand passed up along the left side of the neck and the constriction slowly dilated; the head was then extracted, the child being born at 1.10 a.m. The uterus

did not contract well, and shortly afterwards a profuse hæmorrhage occurred. The hand was passed into the uterus, and coming to a roughened surface it was thought by the medical attendant to be placenta, but very thick for the period of pregnancy. The hand was pushed onwards, and membranes were felt which separated easily. The supposed placenta, however, could not be got away; the fingers were then passed through the membranes and an attempt made to extract; the portions removed were found to consist of ovary, Fallopian tube, and a piece of peritoneum. Immediately afterwards the uterus became acutely inverted and lay outside the vagina, showing an enormous rupture from the internal os uteri on the left side directly upwards to the fundus. It was replaced, the placenta being still *in utero*.

The uterus contracted firmly, there was no further hæmorrhage, and the pulse strong and regular, 100 per minute.

October 4th.—2 a.m., the patient was becoming more collapsed, the pulse more rapid, and the skin cold and clammy. She was fed at regular hours, and subcutaneous injections administered.

8 a.m., the patient has rallied; pulse 130, regular, and extremities warm. At 11 a.m. the placenta and cord were found in the vagina intact.

3 p.m., I saw her in consultation, and found her condition as described above. The abdomen was tender and slightly swollen; the uterus could be felt, hard and very tender, halfway between the navel and symphysis pubis. Vaginal examination showed the cervix and vaginal fornix intact, and the finger could not be passed into the uterine rent.

3.15 p.m., chloroform was given and the abdominal skin prepared for operation in the usual way. When under the influence of the anæsthetic the peculiar contour of the fundus uteri was made out—somewhat kidney-shaped with the convexity towards the right side. There was no subcutaneous emphysema.

A median incision was made 4 inches long through the abdominal parietes and over the uterus. On opening the peritoneal cavity several ounces of liquid, purplish, thick blood escaped, but no clots. On passing the hand into the abdominal cavity it was found that there was a longitudinal laceration of the left side of the uterus between the attachments of the two layers of the broad ligament and extending from the fundus to just above the internal os uteri. No intestines lay in the cavity. No broad ligament on the left side could be found, nor any trace of ovary or tube. The left side of the pelvis at the site of the broad ligament insertion was bare, as was the left side of the uterus. No arterial hæmorrhage was going on. Both uterine arteries could be felt beating deep down in the usual situation.

The right broad ligament was secured with silk, and the ovary and tube removed. The right uterine artery was tied low down near the cervix, and the left was treated in a similar manner. The torn uterus was then cut away, and the flaps carefully adapted and sutured by means of two sets of sutures; the peritoneum was stretched so as to cover it and the bare space on the left side of the stump. A warm intra-peritoneal douche of boracic acid was given, which produced some temporary shock. The stump was dropped into the pelvis, and the wound closed by means of three layers of sutures. A glass drain-tube was inserted. The patient stood the operation, which lasted fifty-five minutes, well, and her pulse was 120 and of fair quality.

An examination of the uterus showed that rupture must have taken place primarily during the extraction of the vertex, and that the thickened and torn edge of the muscular wall was mistaken for the placenta and the two layers of the broad ligament for the membranes.

Subsequent note.—The patient did well for three days after the operation, but her pulse never sank below 100. While passing a motion on the fifth day she suddenly fainted, and died without having recovered consciousness.

Dr. HERMAN asked as to the sense in which the term "Bandl's ring" was used. As he understood the report, it seemed that as the labour was premature, the os uteri internum had not undergone the expansion which preceded labour at term; that the cervical cavity had not become part of the uterine cavity; and that the ring felt was simply the undilated os internum. The case seemed to him to give additional point to Dr. Sinclair's recent address at Montreal. The rupture was produced in an attempt to hasten delivery. But the child was premature; he could not understand what mechanical obstruction there could have been; and therefore he failed to gather from the notes the reason why delivery was not left to nature.

The PRESIDENT agreed with Dr. Herman in the opinion that the case narrated by Dr. Phillips was a striking illustration of the truth which Dr. Sinclair had had the courage to proclaim in his address to the section of Obstetric Medicine at the recent meeting of the British Medical Association in Canada, namely, that at the present day there was far too great readiness to have recourse to instrumental aid in delivery, and that the results of this unnecessary interference were often disastrous. He hoped every Fellow present had read Dr. Sinclair's address. Those who had read it would, he felt sure, be grateful to Dr. Sinclair for having spoken so frankly. He (the President) could not help regarding Dr. Sinclair's presidential address as in many respects complementary to his own, in that it indicated another of the causes for the undiminished puerperal mortality in this country.

Dr. HERBERT SPENCER said that Dr. Phillips's case was an interesting example of one of the most terrible accidents of midwifery practice, and it was very satisfactory that the patient appeared to be progressing well. He agreed with Dr. Herman that the cause of the rupture appeared to be due to "meddlesome midwifery," of which there was a great deal too much at the present time. Yet those who had the greatest experience of this grave accident would be the last to attribute it lightly to the bad practice of the doctor; he himself had known it to occur on three occasions without any interference, and in two the labour appeared to be otherwise normal. He had seen about ten cases of this dreadful accident, and the only two cases which recovered were treated by plugging the tear with iodoform gauze. He thought this method of treatment had much to recommend it, as it did not give rise to shock, which the depressed condition of these patients did not permit them to withstand. Two cases of his own, others of which he had read, and many which were never published, showed that abdominal hysterectomy was, speaking generally, too severe an operation for patients already shocked by rupture of the uterus, and it was against its routine practice that he wished especially to speak.

Cases in which the child had escaped into the abdomen required abdominal section, and those in which (as in Dr. Phillips's case) the broad ligament had been torn across required hysterectomy; but he thought that in such a case vaginal hysterectomy was preferable, being a simpler and quicker operation, and attended by less shock.

ON THE MANAGEMENT OF TRUE AND FALSE CAPSULES IN OVARIOTOMY.

By Alban Doran,
SURGEON TO THE SAMARITAN FREE HOSPITAL.

(Received September 16th, 1897.)

(*Abstract.*)

The author distinguishes a false capsule formed of mesentery, omentum, or inflammatory deposit (Pawlik), a true anatomical capsule, which consists of the mesosalpinx alone, and a false anatomical capsule, where the lower part of the broad ligament, the parietal peritoneum, or the parametrium is involved. The management of the first variety is simply a question of breaking down adhesions. The treatment of the second and third is a less simple matter. The author discusses when a capsule should be cut away, when it should be let fall into the pelvis, and when it should be stitched to the lower end of the abdominal wound and drained. The first course should always be followed, if possible, when the capsule is healthy. The second is necessary when the base of the capsule is too broad to be made into a pedicle, or wherever for any other reasons no pedicle can be formed, the tissue of the capsule being healthy, and hæmorrhage under control. Fixation of the capsule and drainage is needed when hæmorrhage under similar conditions is hard to control, and in all cases where the capsule shows advanced inflammatory changes associated with suppuration of the tumour. In the latter condition oozing of serum increases the danger of septic infection. A case is related where there was free general oozing from the capsule of a large suppurating

cyst. The capsule was therefore fixed to the parietes, and plugged with sterilised iodoform gauze, which was removed on the third day. Thus hæmorrhage was stopped and sepsis averted. The author discusses the advantages and dangers of iodoform plugs. He also dwells on the prejudice of many surgeons against the practice of fixing the capsule to the wound. The danger of strangulation from a loop of intestine slipping beneath the capsule is theoretical.

Over a year ago I demonstrated, at a meeting of the West London Medico-Chirurgical Society, the nature of a capsule associated with an ovarian cyst. I showed that Pawlik* was right when he insisted that the word "capsule" meant at least two different pathological conditions. I read notes of six cases in my own practice† which proved the truth of Pawlik's theory. Finally, I laid stress on the importance of a thorough knowledge of capsules. I concluded by remarking that if the surgeon persists in doing ovariotomy without any pathological knowledge, he must not be surprised if he loses cases, and finds after death that he has torn up the peritoneum of Douglas's pouch, lacerated a ureter or large vein in the wall of the pelvis, mistaken intestine, adherent to and stretched on the cyst, for the tube stretched over a true capsule, or committed some other deplorable error.

The management of a false capsule which consists of inflammatory deposit, mesentery, or omentum, is hardly a subject of controversy. It is simply a question of breaking down adhesions. The importance of false capsules lies in their recognition, and not in their treatment. I am referring to the genuine inflammatory variety, which might be henceforth termed Pawlik's capsule, for the sake of brevity.

By a true capsule I mean the mesosalpinx, the lower part of the broad ligament being not opened up. But

* 'Ueber pseudo-intra-ligamentöse Eierstocksgeschwülste,' Vienna, 1891.

† "Capsules, False and Real, in Ovariotomy, with Notes of Six Cases," 'Brit. Med. Journ.,' 1896, vol. i, p. 960.

the lower part may be opened up as well as, or without the mesosalpinx, and the parietal peritoneum or parametrium may be involved. In such a condition we have a false, but still an anatomical capsule. I described these complexities at length in the memoir already noted.

It is the management of anatomical capsules which deserves some consideration. All operators agree that the tumour must be shelled out of the capsule; but as to what should be done with the capsule all are not agreed. Should it be cut away? should it be let fall into the pelvis? or should it be stitched to the abdominal wound and drained?

I find that the first course should be done, if possible, when the capsule is healthy; the second if the first be not possible, yet the capsule healthy; whilst the third is always needed when the capsule shows advanced inflammatory changes associated with suppuration of the tumour.

When a simple broad-ligament cyst is enucleated from its true capsule,—that is, from the mesosalpinx—the capsule shrinks to small dimensions, and it can be transfixed close to the uterus, as in an ordinary ovarian pedicle, and tied and cut short. If the ovarian vessels be of any size, they should be tied separately. I know of a case where an experienced operator lost a patient through neglecting this precaution.

Many capsules, however, cannot be treated in this manner. The base may be of great breadth. After enucleation of the tumour, just before it is divided from the capsule, its vessels may be easily distinguished and secured; indeed, there is a kind of pedicle to the tumour inside the capsule consisting of these vessels and much connective tissue. Then the tumour is cut away. There is usually little fear of hæmorrhage from the capsule, and any bleeding points can be tied. But what is to be done when they are secured, and what must be done when there is deep oozing, hard to check?

It is under such conditions that the capsule is often suffered to fall down into the pelvic cavity. I admit

that, as a rule, this practice is good, and I follow it when it is clear that all vessels have been secured, and that oozing is checked. Even in an extreme instance,* where a large cyst had burrowed into the lower part of the broad ligament, leaving the mesosalpinx intact, I succeeded in stopping the oozing by pressure of sponges retained whilst the sutures were introduced into the abdominal wound. When the sponges were removed, the capsule was left to fall into the pelvis. In this, as in many simpler cases in my own practice, no bad effects followed the dropping of the capsule.

I deny, however, that it is always good surgery to let the capsule fall, even when its tissues are healthy. The bleeding is sometimes very hard to control. When it proceeds from the deeper part of the pelvis, it is customary to pass curved needles freely around bleeding points, which are tied by the ligatures introduced by the needles. This curved-needle ligature, as I may call it, the "Umstechung" of the Germans, is a valuable surgical contrivance under many conditions. But in this particular case, even in the Trendelenburg position, it is surgery in the dark, which is bad surgery. Large veins or even the ureter may be tied, and the parametric tissue, always best left alone, is unavoidably wounded. The wounds inflicted by the needles often increase the bleeding. Hence when there is free oozing from a capsule which cannot be trimmed away, it is always best to secure as many bleeding points as possible by means of the forceps and ligature. When the silk cannot be satisfactorily applied, a pressure forceps left on the point for a few minutes will almost assuredly effect the desired object. The general oozing can be checked, as a rule, by sponges.

There will always remain cases where the oozing from the interior of the capsule cannot be checked during the operation; I maintain that in such a case the capsule should be fixed to the lower angle of the wound and

* Loc. cit., Case 5.

drained, or packed for awhile with gauze, till the oozing is controlled.

Some surgeons have a great prejudice against this practice. Mr. Cripps,* in criticising in courteous terms my own advocacy of the procedure, writes:

"What is the object of thus draining the interior of the capsule? Surely, if the whole tumour has been shelled out from within it, and the operation conducted aseptically, everything is most favourable for the clean, raw, under surface of the capsule to lie flat on and unite with the fascia underneath. Thus there is no cavity at all, in the ordinary sense, left, and all that is to be feared is a little extravasation of blood. Is it for fear of this that the capsule is to be drawn up and stitched to the skin?"

Here I may observe that most surgeons agree with the above principles. But when a considerable extravasation of blood is to be feared, I hold that the stitching of the capsule to the skin is the safer course. Let us now consider Mr. Cripps's objections:

"If so," he writes, "why not pass the drainage-tube so that its end lies just within the edges of the capsule as they lie *in situ* behind the intestines in the pelvis?"

Mr. Cripps means—why draw up and stitch the capsule at all, why not rather let it drop, introducing the drainage-tube into the rent in its substance made for enucleation of the cyst?

The answer is that when, as he says, "all that is to be feared is a little extravasation of blood," the drainage-tube is superfluous. When much oozing is to be feared, I doubt if it could be carried out properly by the introduction of a tube into the rent in the collapsed cyst. Drainage would be far less easy than when the tube lies in Douglas's pouch. Free use of the tube in unfavourable mechanical conditions has brought drainage into discredit, so that Olshausen wrote early this year: "Like Baer, I am of opinion that drainage in abdominal surgery is a fond delu-

* "Abdominal Section for Ovariotomy," &c., 'St. Bartholomew's Hosp. Reps.,' vol. xxix, 1893, p. 13.

sion."* Assuredly it is worse than a delusion if ineffective. We know that, under certain conditions, drainage of Douglas's pouch is effective. I feel sure that drainage of a capsule fixed to the abdominal wound is thorough. But should we trust a drainage-tube introduced into a collapsed cyst which at the best must entangle a quantity of clot?

We now come to Mr. Cripps's direct objection to fixation of the capsule. That distinguished surgeon writes:

"It is difficult to conceive any more unnatural position than the capsule drawn up in this way and stitched to the abdominal walls. I suppose after this procedure, if we could look inside, we should see the capsule thus treated looking like a soldier's tent, the apex of which is fixed to the abdominal walls. In this way an artificial cavity is produced in the capsule where none would naturally exist. Further, is there no risk in such a case of intestine subsequently finding its way between this attached portion and the pubes, with a liability to strangulation? I know that in inguinal colotomy, where the bowel is fixed to the skin, death has resulted by a piece of bowel slipping and becoming strangulated between the attached bowel and the side of the abdomen."

Our author, as an authority on intestinal surgery, deserves respectful consideration, so the last sentence in particular must not be overlooked. In the case which he quotes, however, a piece of bowel fixed to the parietes of the groin served as a guide for bowel above it. A capsule brought well down towards the pubes, just upon the bladder, is not in a position to let intestine slip below it, and in a few days it becomes firmly adherent to the lowest limits of the peritoneum in that region. As for the cavity of which Mr. Cripps speaks, it is surely better to have a cavity artificially made by a drainage-tube or gauze packing, and under our control, than to leave a cavity to be formed "naturally" by hæmorrhage out of our

* "Die abdominalen Myom-Operationen," Veit's 'Handbuch der Gynäkologie,' vol. ii, p. 710.

control. The cavity which he seems to dread soon shrinks up.

In short, I must conclude that when a capsule oozes freely it is safest to fix it to the lowest angle of the wound and to drain (and pack, if necessary) its cavity. Sure control of the oozing, a source of sepsis if uncontrolled, is thus ensured—a practical aim. The dread of obstruction is nearer to the domain of theory; for, theoretically, a ligatured pedicle of an ordinary ovarian cyst is very liable to cause obstruction, yet obstruction is, after all, rare, and must be risked. Strange to say, I have known of obstruction where the raw surface of the pedicle had been sewn over to avoid that grave complication. So much for theory in abdominal surgery.

I have ever found that in the majority of healthy capsules oozing can be controlled before the end of the operation. Then the capsule can be dropped. But when bleeding cannot be controlled, fixation of the capsule is advisable. When, however, the tumour has suppurated, and the capsule is clearly diseased, fixation and drainage would seem to me to be imperative. Such capsules nearly always ooze badly, and the hæmorrhage adds to the peril of sepsis, and may even do direct harm, as the patients in these cases are always sickly and bear loss of blood badly. A case of this kind came under my care last spring.

E. F—, aged 36, single, a patient of Dr. Priest, of Waltham Abbey, was admitted into my wards in the Samaritan Hospital on May 10th, 1897. She had suffered in March, June, and September, 1896, from colic and vomiting, without evidence of obstruction. Dr. Priest rightly diagnosed peritonitis. Early in 1897 the abdomen began to swell, and a tumour was detected. Mr. Targett examined her in the out-patient department. On admission I made out an oval elastic mass in the lower part of the abdomen, reaching to the left hypochondrium and two inches above the umbilicus in the middle line, but its upper limits were much lower on the

right side. The tumour was moveable to a certain degree, and there was resonance in the flanks and epigastrium. The uterus was very bulky, and the fundus lay in the left groin. It was somewhat moveable, as is not rare in these cases; in fact, it slid on the capsule. The base of the tumour could be felt in the right fornix, displacing the uterus forwards, upwards, and to the left. The temperature was normal, the pulse 100, the appetite good, and the urine free from albumen.

On May 20th I operated, assisted by Mr. Targett. The incision exposed a strongly adherent cyst and a swollen structure, which proved to be the right tube much dilated. It looked like small intestine. In separating numerous adhesions some thick, soft, yellow masses escaped from the peritoneal cavity to the right and behind the cyst. Then I tapped the cyst with a Wells-Fitch small trocar. Several pints of thick pus escaped. I closed the aperture with a T-forceps, and enucleated the cyst from the right broad ligament, into which its base had burrowed. The tissue connecting the base with the capsule was tied with No. 4 silk. The capsule bled freely. There was a very free oozing, without any spouting arteries or distinct bleeding points. I stuffed the capsule with sponges, and on examining the left side found a large pyosalpinx, with a slightly enlarged ovary. I secured the ovarian vessels, transfixed and ligatured the pedicle, and removed the left appendages very completely. The sponges were then taken out of the capsule of the right cyst. I saw that the capsule could not be safely taken away; to let it fall into the pelvis was out of the question. I determined to fix it to the lower angle of the abdominal wound, and drain. I made a purse-string suture for the purpose, and introduced a glass tube; but much blood began to escape. I therefore packed in sponges again, preferring pressure to passing curved needles at random in the base of the capsule, as already explained. The peritoneum was then flushed with hot water. The sponges were afterwards removed from the

capsule. I packed the cavity very firmly with sterilised iodoform gauze, also applying pressure to the front of the wound, which was now closed. Not much blood was actually lost, as I promptly checked the hæmorrhage whenever it occurred in the course of the operation.

On the third day I removed the iodoform gauze, which was soaked with bloody serum. As oozing had ceased I did not pack again, but introduced a rubber tube into the cavity of the capsule. Here I must note that the packing caused no evil effect but one, namely, a very rapid pulse, due, I believe, to absorption of iodoform. Notwithstanding the severity of the operation the temperature only once reached 101°, and that was at the beginning of the first day after operation. There was no vomiting, abdominal tenderness, nor difficulty with flatus; yet on the second day the pulse ranged from 132 to 150. It fell at once when the gauze was removed, and on the fourth day stood at 90, which was slower than before operation.

I should like to hear the opinion of the Society on iodoform-gauze packing. I employed it on this occasion because I knew that there was, and would be, free oozing, which had to be checked, whilst the exposed surface was septic. Pressure was necessary for a long period in order to stop the oozing, so that the gauze would inevitably become charged very soon with a quantity of serum already septic. I therefore deemed it right to make use of a true antiseptic—iodoform—so that it might disinfect the fluid retained in the gauze.

A very rapid pulse when other symptoms are favourable is, according to my experience, a certain indication of poisoning by iodoform in any case where that compound has been freely used. Brettauer, of New York,* finds that there is also a rise of temperature; but wherever I have noted fever I have observed complications, such as retention of flatus, which have satisfactorily accounted for it.

No doubt, then, simple sterilised gauze is best when-

* See "Iodoform Poisoning," 'Brit. Med. Journ., 1897, vol. i, p. 932.

ever it is required to absorb a fluid which is not septic, especially when circumstances allow of frequent change. A capsule of the kind under consideration is best left alone for the first few days. But in this case an antiseptic was necessary and proved effectual, for after all it prevented septic infection, whilst the solitary evil symptom was alarming to the surgeon rather than serious to the patient. I have known of far graver effects following the routine use of opium in simple ovariotomy.

I will now conclude the relation of my case. After the removal of the gauze the patient made a good recovery. I washed out the cavity with various antiseptic solutions for three weeks, and did not let it close until convinced that it was no longer septic. On July 24th, two months after the operation, the patient was well and strong; the wound was quite healthy, and there was no trace of a fistula. When a cavity, like the capsule in this case, is allowed to close too soon, bad results may follow.

Thus, in this case, there was a thickened and diseased capsule which could not be cut away, whilst to let it fall into the pelvis would have been most unjustifiable. Drainage with the capsule in that position would have been ineffective. I was determined that not a drop of the blood which had oozed from the diseased surface should escape into the peritoneal cavity. The capsule was therefore fixed to the external wound as low as the reflection of the peritoneum from the bladder on to the parietes, so that it really adhered to the subperitoneal connective tissue in front of the bladder. Thus there could be no fear that a coil of intestine would slip under the capsule. The hæmorrhage was checked by the pressure of a material which also rendered the effused fluid antiseptic. When there was no more fear of bleeding, the pressure was removed and the cavity drained and washed out.

In conclusion, I trust that I have made clear when, in my opinion, a capsule should be cut away, when it should be let fall into the pelvis, and when it should be stitched to the abdominal wound and drained.

Dr. EDEN asked for a fuller explanation of the difference between the true and the false anatomical capsules. A pediculated broad-ligament cyst opened up the mesosalpinx, but not the lower part of the broad ligament, which remained as the pedicle, and its capsule would therefore be, according to the author, a true anatomical capsule. But many broad-ligament cysts burrowed right down into the floor of the pelvis and possessed no pedicle; according to the author's classification, the capsule of such a cyst would be true in its upper part, and false in its lower part. This distinction seemed unnecessary, but perhaps further explanation from Mr. Doran would remove the difficulty. He also referred to the fact that small ovarian tumours adherent to the back of the broad ligament, were sometimes found covered over in their upper part by a cap or hood formed by the stretching of the broad ligament over them. This condition was puzzling when met with, as it gave the impression that the tumour was contained between the layers of the broad ligament, whereas the latter was merely stretched over it. This relation of the broad ligament he thought might also be termed a false anatomical capsule.

Dr. HERMAN thought Mr. Doran's paper a very instructive one. He thought that Mr. Doran, who spoke from large practical experience, had completely disposed of the theoretical objections to stitching the capsule to the wound.

Dr. HERBERT SPENCER agreed with all the main points of Mr. Doran's paper, but did not think that intestinal obstruction from adhesion of intestine to the stump in ovariotomy was a rare occurrence. These cases did not go to special hospitals; but the surgeons attached to general hospitals knew that this accident is far from being a rare cause of intestinal obstruction. He agreed with Mr. Doran that the most satisfactory way of dealing with these sacs was to drain them, unless they could be tied as stumps or the bleeding certainly arrested. Cases in which the intact sac could be stitched to the abdominal wound did well with the drainage-tube; but cases in which the sac had been torn or which could not be fixed to the wound, and suppurating cases, should, he thought, be treated by gauze draining. He had employed iodoform gauze for this purpose for the last four years with very satisfactory results. In the last three years he had only once at a laparotomy used a drainage-tube, and then it was unnecessary. During the year 1896, out of thirty-seven laparotomies he had only lost the first (a case of advanced extra-uterine pregnancy operated upon as an emergency case for secondary rupture); the cases included eight suppurating tumours, two of which communicated with the bowel and one with the bladder; these eight cases were all drained by iodoform gauze. He thought we had in this material an excellent means of checking hæmorrhage, averting sepsis, and

blocking out intestine from torn capsules and infected areas. When used to drain intact capsules, it might be removed in two or three days; but when it lay against intestine, he was in favour of its remaining for eight days.

Dr. DRUMMOND ROBINSON had seen a case in which the cavity formed after the enucleation of a broad-ligament cyst had been drained through the vagina, with excellent results. The cyst had suppurated and burst into the rectum. After the cyst had been enucleated, a drainage-tube was passed through the floor of the cavity formed by its capsule into the vagina. The abdominal opening in the capsule was then closed with silk sutures. There was a discharge for a few days of fæcal material into the vagina.

Mr. BUTLER-SMYTHE congratulated his colleague on having introduced so interesting a surgical discussion at a meeting of the Obstetrical Society. So far as his own practice was concerned, without making any general rule, his method of dealing with the capsules would be as follows:—All ordinary thin capsules would be tied and dropped into the pelvis. Where portions of the cyst wall were unavoidably left attached to the capsule, rendering it thick and likely to suppurate, the capsule would be stitched in the lower end of the wound, and a glass tube inserted. In those rare cases where the broad ligament had been enormously separated, and where adhesions had been formed high up in the abdomen previous to the enucleation of the tumour, and where a large bleeding surface was left exposed, the cavity would be plugged with iodoform gauze, which would be left in for three or four days. He had frequently seen cases of iodoform poisoning, and the first symptoms usually appeared about the fourth day, and were unmistakable: rapid pulse, sudden rise of temperature, headache, giddiness, and in bad cases vomiting. In all the cases noted, the symptoms abated immediately on removal of the gauze packing. He recommended packing with the 10 per cent. gauze, and pointed out that the symptoms depended not on the packing with iodoform gauze, but rather on the amount of iodoform impregnating the material used in the packing.

Dr. EWEN MACLEAN remarked that, in addition to those mentioned in Mr. Doran's paper, an ovarian tumour developed within and distending a complete ovarian sac, would present a true anatomical capsule of peritoneum which did not involve either the mesosalpinx or the lower portion of the broad ligament.

The PRESIDENT expressed a general concurrence in the views advocated in the paper. At one time the prevailing practice of abdominal surgeons was to stitch the mouths of emptied cysts to the edges of the abdominal incision with great frequency. Now we placed more trust in the peritoneum, and returned many

things to its keeping that we should then have hesitated to do. A sac or capsule that cannot safely be removed need not necessarily be stitched to the wound. It is only when it is septic or when there is likelihood of there being free hæmorrhage from the inner surface that this mode of dealing with it is called for. With regard to gauze packing he had not had a large personal experience. The removal of the gauze was so formidable a matter, and was apt to produce so much distress, both bodily and mental, to the patient, that he never had recourse to it unless he was compelled. At the same time he recognised its immense value in certain cases, as, for instance, in hæmorrhage from vessels to which it was impossible to apply the ligature owing to their lying so deeply in the pelvis. The point alluded to by Dr. Eden was to him of great interest. He had, some years ago, called the attention of the profession to the ease with which operators might be misled and puzzled by the tense peritoneal covering often seen over the swelling in cases of small suppurating ovarian cysts. These cysts became adherent to the back of the broad ligament whilst still small. In the process of rapid enlargement that followed suppuration, the broad ligament became drawn over the adherent ovary like a tense hood, completely concealing the parts beneath. He believed many cases had been treated and described as abscesses within the broad ligament, which were really instances of suppurating ovaries behind the broad ligament which had become folded over them.

Mr. Alban Doran observed that Dr. Ewen Maclean and Dr. Eden would find a full report of his views on "capsules false and real," in the article quoted at the beginning of his paper. The cases referred to by Dr. Eden and the President were examples of "Pawlik's cyst," where the broad ligament was not invaded by the new growth, but was adherent to it and stretched over its surface, the false capsule being completed by adherent mesentery or omentum. The tube, ovarian ligament, and mesosalpinx forming the true anatomical pedicle of an ordinary ovarian cyst, Mr. Doran considered that the meso-salpinx formed the true anatomical capsule of an ordinary burrowing ovarian cyst. Let such a cyst be tapped and its base towards the uterus enucleated, then the true anatomical capsule was reduced to a true anatomical pedicle. When, however, the cyst burrowed in other directions it touched anatomical structures, such as the lower part of the broad ligament, or the parietal peritoneum, which formed a kind of capsule; but it also touched parametric tissue, which could not make a true capsule, or even the bony wall of the pelvis. Hence the tumour had an anatomical capsule very imperfect and abnormal—"false" being the best term expressing its nature. As Dr. Herman observed, sewing up the rent in such a capsule and letting it drop was

seldom good surgery. No speaker seemed to think that the fixation of the capsule to the wound was liable to cause obstruction, but Mr. Doran was interested to hear that Dr. Herbert Spencer found that cases of intestinal obstruction caused by an old ovarian pedicle were frequent. He would like to know if the raw surface had been sewn over or left exposed in the majority of these cases. He himself had made a post-mortem many years ago on a case of obstruction where the operator had closed the raw surface by suture as a precaution against the very complication that occurred. In Spencer Wells' case, which caused him to distrust the ligature for years, the bowel adhered to the side and not to the raw surface of the pedicle. Dr. Robinson spoke of vaginal drainage, but the case which he quoted illustrated Mr. Cripps's communication on the "Treatment of Ovarian and Extra-uterine Cysts communicating with the Rectum" in the 'Transactions' of the Medical Society. Mr. Doran's paper referred to quite a different kind of case, where a second incision, made for vaginal drainage, would have hardly improved matters. He admitted, with the President, that fixation of the pedicle was formerly much overdone. As to iodoform gauze, he had already referred to evidence of poisoning in his paper. He maintained that a high pulse was the most prominent feature. Mr. Butler-Smythe probably remembered Mr. Doran's case of removal of a large cystic myoma of the uterus. The pedicle, fixed by the serre-nœud, was hard to keep dry, so it was freely dressed with tannin and iodoform powder. The pulse became very rapid, and did not fall till the powder was discontinued. Mr. Doran was obliged to the President, Dr. Herman, and Dr. Spencer for the record of their experience of iodoform-gauze packing. In the case related in this paper he had done what Dr. Spencer seemed to practise very largely; on the other hand, he agreed with the President that the packing and extraction of the gauze terrified some patients and was disagreeable to all, whilst they appeared to object far less to the drainage-tube.

NOVEMBER 3RD, 1897.

C. J. CULLINGWORTH, M.D., President, in the Chair.

Present—51 Fellows and 7 visitors.

Books were presented by Dr. Dakin, the Royal Medical and Chirurgical Society, and the Académie de Médecine de Paris.

John Stewart Boyd, L.R.C.P.Lond., was admitted a Fellow of the Society.

W. E. Fothergill, M.D. (Manchester), and William Bain, M.D. (Harrogate), were declared admitted.

The following gentlemen were elected Fellows of the Society:—George Edward Twynam, L.R.C.P.Lond.; Guy Bertram Hollings, M.B., B.S.; James Robert Wallace, M.D.Edin. (Calcutta); Charles Westbrooke Grant-Wilson, L.R.C.P.Lond.; Byramzi Hormasji Nanavatty, L.M.&S. Bombay (Ahmedabad); Courtenay Charles Weeks, L.R.C.P. Lond. (Pinchbeck); and Edward Fluder Chinery, M.R.C.S. (Lymington).

FIBROMA OF THE OVARY.

Shown by Dr. C. J. CULLINGWORTH.

THE specimen consisted of a large, heavy, solid, oblong tumour of the left ovary, 10½ inches in length and 5

inches in thickness. Its weight was 5 lbs. 6 oz. The lower part was more or less moulded to the shape of the pelvic cavity. The upper or abdominal portion was greater in all its dimensions, and extended upwards to a line 3½ inches above the umbilicus. The tumour was rounded and smooth anteriorly, flattened posteriorly. Its pedicle was 2 inches in length. There were a few vascular adhesions posteriorly, none in front. There was commencing cystic degeneration of the posterior part of the intra-pelvic portion; the rest had on section the appearance of œdematous fibrous tissue. Under the microscope the structure was shown to be that of a simple fibroma.

The tumour was removed on October 26th, 1897, from a single woman aged 21, who was otherwise in good health. It had been noticed about two years, and had caused little inconvenience beyond occasional slight attacks of pain in the abdomen. Menstruation was unaffected. There had been no interference with the functions of the bladder or bowels. The right ovary was healthy, except for a small serous cyst (hydrops folliculi), the size of a walnut, which was punctured.

Mr. Alban Doran noted that there seemed to be a natural law, with exceptions probably but apparent, that very young women were subject to ovarian fibroma and not to uterine myoma, whilst women over thirty were subject to uterine myoma and not to ovarian fibroma. Since he, and a few weeks later Doléris, had operated on the first cases of fibroma of the ovarian ligament, and had dwelt on ovarian fibroma as a disease less rare than was formerly supposed, many cases had been published. Thus, since Mr. Doran's memoir on the subject last year ('Trans. Obstet. Soc.,' vol. xxxviii, p. 187) an important paper had been written by a Fellow of the Society, Dr. H. Briggs, of Liverpool ('Brit. Med. Journ.,' vol. i, 1897, p. 1083). The author reported eight cases of fibroma of the ovary, which, as he rightly remarked, would once have been termed cases of sarcoma. Dr. Briggs further operated on a case of fibroma of the ovarian igament, apparently the fourth known to medical literature.

GANGRENE OF AN INTERSTITIAL FIBRO-MYOMA OF THE UTERUS.

Shown by Dr. C. J. Cullingworth.

The specimen was one of a group of interstitial fibro-myomata in a uterus removed, October 7th, 1897, by the operation of abdominal hysterectomy. The patient was 34 years of age, a cook, and unmarried. She described her first serious symptoms as having commenced twelve months ago, when, on rising from bed in the morning, she had a sudden attack of abdominal pain, accompanied with faintness. From that time she had recurrent attacks of pain in the left side of the abdomen, menorrhagia, and an intermenstrual discharge of a yellow colour. There was increasing weakness, so that in June last she was obliged to give up regular work. Early in July she had retention of urine and noticed a swelling in the lower part of the abdomen, which has gradually increased in size from that time.

She was admitted to St. Thomas's Hospital on September 25th, 1897. She was thin and sallow, and looked pale and ill. Her temperature was 99·6°. She had a lobulated irregular tumour in the lower part of the abdomen, presenting the physical characters of a group of fibro-myomata in the uterine wall. The largest of these tumours was immediately above the pubes, and could be felt to bulge into the vagina through the anterior vaginal wall. The distance from the top of the symphysis pubis to the upper limit of the abdominal tumour was 7 inches, and the width of the entire mass was about the same. The length of the uterine canal was 6 inches.

The mass after removal measured $5\frac{3}{4} \times 5\frac{1}{2} \times 3\frac{3}{4}$ inches, and consisted of the body of the uterus, much hypertrophied and containing a number of interstitial fibro-myomata. Two of these were larger than the rest, one at

the fundus, $2\frac{1}{2} \times 2$ inches, which had become softened from œdema, the other at the lower part of the anterior wall, $3\frac{1}{2} \times 3\frac{1}{2}$ inches, which presented changes that showed it to be in a state of gangrene. On section it had the bluish-pink appearance characteristic of commencing putrefaction, and it emitted a peculiar and disagreeable odour like that of stale fish. There were no evidences of breaking down or of suppuration. No cause could be discovered for the necrotic change. The smaller tumours were ordinary hard fibro-myomata.

FIBRO-MYOMATA OF THE UTERUS CAUSING INTESTINAL OBSTRUCTION AND DEATH TWO YEARS AFTER THE MENOPAUSE.

Shown by Dr. C. J. Cullingworth.

The specimen was from the post-mortem room of St. Thomas's Hospital, and consisted of a uterus studded with fibro-myomata, chiefly subperitoneal, one of which had pressed on the rectum, causing obstruction. The distended bowel above the seat of obstruction had ruptured, causing extravasation of fæcal matter into the peritoneal cavity and death. The patient was a widow, aged 55, who had been in the Camberwell Infirmary for some months, suffering from chronic constipation and occasional attacks of severe abdominal pain. The menopause had occurred two years previously. There was a rounded immovable tumour in the pelvis, bulging from the front into the rectum.

The patient was admitted into St. Thomas's Hospital under the care of Dr. Sharkey on October 8th, 1897, for intestinal obstruction. She was moribund on admission and died the same evening. The history was that there

had been an action of the bowels after an enema on the 1st of October, and another slight one, also after an enema, on the 3rd, since which, *i. e.* for the last five days, no motion had passed.

At the autopsy the rectum was found pressed upon, flattened, and obstructed by a fibro-myoma of the uterus. The tumour was adherent by its tip to the pelvic wall immediately to the left of the rectum and slightly also to the rectum itself. The entire colon, ascending, transverse, and descending, was distended with flatus and solid fæces. The wall of the cæcum had given way, and fæcal matter had escaped into the abdominal cavity. The site of the perforation was not an ulcerated surface, but the thinnest portion of the distended cæcum. There were also some tuberculous ulcers, but these were found high up in the small intestine. The lungs were tuberculous.

Dr. DAKIN believed that intestinal obstruction by fibroid tumours of the uterus was an extremely rare event, even when such tumours became impacted in the pelvis. The history of the patient from whom the President's specimen was removed reminded him of a case he was asked to see by Mr. Warrington Haward. In that instance the patient, a woman of fifty or thereabouts, had suffered from increasing constipation for some months, and obstruction finally became complete. A mass was felt *per rectum*, which on vaginal examination proved to be a myoma of the uterus. The uterus was somewhat retroverted and very firmly impacted, seeming to be in close contact with the pelvic wall all round. It was considered probable that the obstruction was brought about by compression of the rectum. After some patience the uterus was raised slightly out of the pelvis, and the bowels acted a few hours later. What was passed turned out, however, to be the contents of a short length of gut just above the brim of the pelvis, for the symptoms of obstruction were not relieved; and on abdominal section being performed there was found to be a cancerous stricture of the sigmoid flexure. Although Dr. Dakin had seen a fairly large number of cases of impacted fibroid, this was the only one in his experience in which there had been any suggestion of obstruction being caused by their means.

EARLY ECTOPIC GESTATION (? TUBO-UTERINE) COMPLICATED BY FIBRO-MYOMATA OF THE UTERUS.

Shown by Dr. C. J. Cullingworth.

The specimen consisted of the uterus and appendages removed by the operation of abdominal hysterectomy for fibro-myomata, complicated with ectopic gestation and what was thought to be a pelvic hæmatocele. The mass that had been mistaken for a hæmatocele proved to be a membranous sac containing an embryo of about the middle of the third month, and probably some blood-clot. The head and both lower extremities of the fœtus protruded from one end of the sac, and the sac was connected by a broad band of tissue with a soft swelling at the right cornu of the uterus which has not yet been opened, but which is believed to be a gestation sac, formed partly of the uterus and partly of the Fallopian tube. It appeared as though the fœtus had effected a bloodless escape,—bloodless, that is to say, so far as regarded any effusion of blood (encapsuled or otherwise) into the peritoneal cavity.

Dr. Cullingworth purposed furnishing to the Society, at a future meeting, a detailed account of the case, and merely exhibited the specimen now in order that the Fellows might have an opportunity of seeing the parts exactly as they were when removed from the body and before they had been opened up or in any way interfered with.

Drawings of the specimen, both as seen from front and back, had been prepared for Dr. Cullingworth by Mr. R. E. Holding, and were exhibited.

ON A CASE OF SARCOMA OF THE UTERUS WITH INVERSION.

Shown by J. H. Targett, M.S.

The patient was a single woman, aged 79 years, under the care of Dr. Williamson, of Ryde. Throughout life she had been healthy and very strong till she had a hemiplegic attack at seventy-eight, from which her recovery was imperfect. In September, 1896, she began to complain of hypogastric pain with glairy vaginal discharge, and a vaginal examination revealed what was thought to be a small pedunculated polypus hanging through the os uteri.

A month afterwards the supposed polypus had disappeared, and there was no pain; but the uterus was somewhat enlarged. In another month, however (November, 1896), the patient again had severe forcing hypogastric pain, with blood-stained and offensive discharge. The os uteri was now found dilated, and a large sloughy mass presented. With long ovum forceps a softish growth, much of it very fœtid, was removed piecemeal, in all about a teacupful, and with very little bleeding. The result was immediate relief to pain and to the previously hectic range of temperature; and under careful antiseptic douching great local improvement was obtained. Portions of the growth were submitted to the Clinical Research Association, and certified to be sarcomatous, "the sarcoma consisting of round, oval, and short spindle cells."

From this time the general health was maintained, and there was no further local discomfort till May, 1897, an interval of six months, when the old hypogastric straining pain returned with rather free intermittent losses of blood. The os uteri was now again found widely dilated, with a large fungating mass protruding. Within a few days the tumour descended well into the vagina, and pain and

bleeding were such as to demand active interference. Under an anæsthetic a more thorough examination was made, when it was found that an irregular mass as large as an orange, and of elastic firmness, lay within an inch of the ostium vaginæ. Above, this growth was continuous with a perfectly smooth, firm, cylindrical body, which was as thick as an infant's wrist, and might easily have been mistaken for a pedicle; this body extended upwards and passed through the widely dilated, thin, and rigid ring of the cervix. The hand placed externally above the pubes failed to come upon the fundus uteri, and a rectal examination confirmed the belief that the case was complicated with inversion of the uterus.

On June 1st, 1897, the presenting part of the growth was seized by volsella and drawn down. It was sessile upon the inverted fundus, and attached by an extensive base, chiefly to the left side of the fundus and posteriorly. The mass was freely detached with a curette down to the uterine muscular coat, and the denuded surface was touched with carbolic acid. Reposition of the uterus proved to be so difficult that it was not entirely accomplished. The immediate result of the operation was complete relief to pain, to bleeding, and to feverishness; while sleep and appetite having returned, immense comfort was obtained. A portion of the tumour was again examined by the Clinical Research Association, who gave the following report. "The growth is a spindle-celled sarcoma, arranged in interlacing bundles. It contains a considerable number of large multinuclear cells, and there are areas of degeneration to be seen."

From this time onwards uterine symptoms gave the patient no further trouble beyond the existence of more or less discharge. But her general health declined, and she ultimately died of cerebral hæmorrhage in September, 1897.

Besides being an instance of an infrequent disease at an unusually advanced age, this case exemplifies particularly well the occurrence of inversion in sarcoma uteri, and the

need of keeping this possibility in mind when interfering surgically. It also shows what great relief can be given by operation, even under unfavourable circumstances as to age and general condition. No post-mortem examination was permitted, so there is no information forthcoming as to the existence of secondary deposits.

Description of specimen (by Mr. J. H. Targett).—The specimen consists of the uterus with its appendages and the base of the urinary bladder. A small ring of vagina is attached to the periphery of the cervix uteri, and the mucous surface of the former (vagina) is much ulcerated. The external os uteri forms an oval aperture nearly two inches in its chief diameter. Through this protrudes the pedicle of a tumour formed by the inverted body of the uterus. The tumour itself is a globular mass three inches in diameter, having a somewhat lobulated outline, with a smooth or superficially ulcerated surface. Where this tumour is connected with its pedicle there is a raised overhanging margin of growth. The pedicle is formed by the inverted lower segment of the body and upper end of the neck of the uterus. The position of the internal os uteri is not easily defined, but the pedicle of the tumour is surrounded by a narrow groove which measures five-eighths of an inch in depth from the external os to the limit of the inversion.

A vertical antero-posterior section of the whole preparation shows that the tumour above described is formed by a new growth springing from the mucous surface of the fundus uteri and extending towards the cervix. At its thickest part the growth measures an inch in depth, and here it has invaded the muscular substance so as to reach the serous coat. The growth is homogeneous, and of a white colour, except where it has become necrotic from ulceration of the surface.

There is an entirely separate deposit in the posterior wall of the cervix; this may be the result of infection, possibly at the time of operation. It pushes up the peritoneum of Douglas's pouch, and extends upwards for

nearly two inches from the external os uteri, where it forms an overhanging margin to the posterior lip. The centre of this cervical deposit is occupied by a large mass of necrotic growth. There is an interval of more than an inch between the edge of the sarcoma springing from the body of the uterus and the growth in the cervix; in this interval the mucous membrane is quite healthy. The pouch on the peritoneal aspect of the preparation caused by inversion of the uterus measures 2½ inches in depth. It is lined by smooth peritoneum, except at the lower end, where there are a few soft adhesions, and the growth is in close contact with the serous membrane. The broad ligaments and Fallopian tubes are drawn into this pouch as far as the ovaries, which are seen just outside its mouth.

Dr. GRIFFITH remarked that the connection of inversion of the uterus and sarcoma was well established, though not generally admitted. His attention had been drawn to the subject some years ago by a case in St. Bartholomew's, under the care of the late Dr. Matthews Duncan and Dr. Godson. He would be happy to bring the specimen forward at the next meeting.

Dr. EWEN MACLEAN remarked that the mechanism producing inversion of the uterus was regarded as differing in such a case as this from that which attained when inversion was associated with submucous polypus. In the latter condition, the part of the uterine wall affording the attachment of the polypus is, from the first, drawn in by the activity of the remainder of the uterine corpus; whereas an area of the uterine wall weakened by, say, a sarcomatous growth is believed to prolapse into the cavity, and thus be brought under the influence of the uterine musculature.

CARCINOMA OF UTERUS.

Shown by Dr. PLAYFAIR.

DR. PLAYFAIR showed a carcinomatous uterus removed by total extirpation, of some clinical interest from the fact that two years antecedently the ovaries and tubes

on both sides had been removed for double pyosalpinx. Of late, surgeons had been removing the uterine appendages for cancer of the breast, on the theory, which never had appeared to him a very tenable one, that after oöphorectomy the reproductive organs fell into inactivity, and that malignant disease would not develop, or if it had begun that it would not progress. Of course, every gynæcologist knows that this is not the fact after the natural menopause, since cancer is quite common both in the uterus and in the breast long after menstruation has ceased. In this case we have a clinical proof that removal of the ovaries does not necessarily prevent the development of cancer in a younger woman.

Another point of interest in this case was that on vaginal examination the uterus was found to be quite fixed on the right side. Generally speaking, he should consider complete fixation of the malignant uterus on either side to be a contra-indication to operation. In this instance, however, he suspected that the antecedent pyosalpinx might have been the cause of the fixity, not the extension of the malignant disease. He was able to procure the notes of the former operation, and found that fixity of the uterus on the right side was specially noted in them. The cancer here was of comparatively recent development, and he therefore decided to give the patient the benefit of the doubt. This naturally made the operation exceptionally difficult. The patient made an excellent recovery, and so far continues quite well.

ADENO-CARCINOMA OF UTERUS AND LEFT OVARY REMOVED BY ABDOMINAL SECTION.

Shown by Dr. William Duncan.

The patient was a single woman aged 29. The catamenia began at eighteen, and were regular until March,

1897, since which time there had been amenorrhœa. In December, 1896, the patient first noticed her abdomen getting bigger, but she suffered no pain, and did not seek advice. For the last two months it had grown rapidly.

On examination the abdomen was greatly distended by an irregular solid tumour, which reached 3 inches above the umbilicus. No bruit was to be heard over it. Both flanks were resonant.

Abdominal section (October 21st).—The uterus was removed by the intra-peritoneal method of hysterectomy. The right ovary consisted of a mere trace, which was adherent to the uterus, but the left ovary was found to be a solid mass (10 inches long and 6 inches wide) which extended up under the costal margin. It was removed in the usual way, and the abdominal wound closed in three layers (*a* peritoneum, *b* sheath of recti, *c* skin). The patient made an uninterrupted recovery. On laying the tumours open they exhibited a somewhat similar appearance—yellowish, softish in consistence, and with cysts here and there.

Microscopic examination * showed that the tumours were truly carcinomatous; they were studded with groups of cells of different sizes enclosed in alveoli. In the uterus the growth appeared to have extended down from the glands.

UTERUS WITH SUBMUCOUS AND INTERSTITIAL MYOMA REMOVED BY HYSTERECTOMY.

Shown by Dr. William Duncan.

The patient from whom the tumour was removed was a multipara aged 45, who for the last two years had suffered from profuse metrorrhagia. In June, 1897, her

* A section was shown under the microscope at the meeting.

medical attendant dilated and curetted the uterus, and then detected the myoma in the posterior wall about the size of an orange. As the hæmorrhage persisted the patient consulted Dr. Duncan, who advised abdominal section. This was performed on October 20th, the medical attendant being present, and it was considered better to remove the uterus by the intra-peritoneal method of hysterectomy than to merely remove the appendages, even though the myoma was a small one. The patient has made a normal convalescence, and now (on fourteenth day) is practically well.

Dr. HERMAN thought that the fibroid shown by Dr. Duncan could have been easily and safely removed by enucleation, and the patient thus cured without mutilation.

In reply to several speakers, Dr. DUNCAN disagreed that it would have been better to have enucleated the tumour *per vaginam* than to have performed hysterectomy; enucleation is an extremely dangerous operation, for one can never tell how near the tumour grows to the peritoneal coat, and perforation into the abdominal cavity with fatal result not infrequently follows the operation. [Dr. Duncan laid the tumour open at the meeting, and then showed how thin was the layer of tissue separating the tumour from the peritoneum, and said it might easily have been perforated had enucleation been attempted.] He was glad to hear the President condemn enucleation, and to give his opinion that the right operation was performed in this case. He (Dr. Duncan) considered it better in all cases of myoma (no matter how small) where abdominal section is called for, to perform intra-peritoneal hysterectomy rather than merely remove the ovaries and Fallopian tubes.

ON ABDOMINAL HYSTERECTOMY FOR MYOMA OF THE UTERUS; WITH BRIEF NOTES OF TWENTY-EIGHT CASES.

By J. Bland Sutton.

(Received October 12th, 1897.)

(*Abstract.*)

Recent improvements in the methods of performing hysterectomy have been followed by such good consequences that abdominal hysterectomy for myomata of the uterus, too large to admit of vaginal myomectomy, is now rapidly gaining favour, and it is becoming a plain duty to point out to patients with uterine myomata, as we do when they have ovarian tumours, that the earlier the tumours are removed the less the operative dangers, and therefore a diminished peril to life. It is for the purpose of showing how safely uncomplicated myomata of the uterus can be dealt with that I have ventured to place brief records of twenty-eight cases, operated upon at the Chelsea Hospital for Women and the Middlesex Hospital, before this Society.

Whenever possible, especially when operative interference is necessary during the menstrual period of life, I reverse the conditions of oöphorectomy, so that instead of removing the ovaries and Fallopian tubes and leaving the uterus and tumour, I remove the uterus and tumour and leave one or both ovaries, with the corresponding Fallopian tube. This happened in fourteen cases (*vide* Addendum). The immediate results of this method are admirable, and spare the patient at least the inconvenience of an acute menopause.

Recent improvements in the methods of performing hysterectomy have been followed by such good consequences that abdominal hysterectomy for myomata of the uterus, too large to admit of vaginal myomectomy, is now rapidly gaining favour. The risks are not greater than those of ovariotomy, the convalescence is as rapid, but the operation is not simple. Experience teaches clearly enough that the removal of a myomatous uterus of moderate dimensions is a very safe proceeding; but the existence of adhesions to intestines, septic tubes and ovaries, or sacculated kidneys greatly increases the operative risks. It is a plain duty to point out to patients with uterine myomata, as we do when they have ovarian (or what we think are ovarian) tumours, that the earlier they are removed the less the operative dangers, and therefore a diminished peril to life.

It is for the purpose of showing how safely uncomplicated uterine myomata can be dealt with, that I have ventured to place a brief record of my cases operated upon at the Chelsea Hospital for Women and the Middlesex Hospital before the Society.

I have varied the details of operating from time to time; but the principles remain practically the same for all.

The preliminary stages and the instruments required are those needed for ovariotomy *minus* the trocar. The Trendelenburg position, though not indispensable, very greatly facilitates the manipulations. Before elevating the pelvis it is useful to introduce a sound into the bladder.

The tumour is exposed by a free incision in the linea alba between the umbilicus and the pubes; with large tumours the incision often extends far above the navel. The intestines are then protected by a flat sponge and the tumour examined, and the presence or absence of complications determined. The operator then proceeds to ligature the vessels. This is the essential feature of the operation, and the surgeon varies his method according to the requirements of the case.

When possible the tumour is drawn out of the pelvis and each mesometrium is transfixed with a pedicle needle armed with stout silk, so as to secure the ovarian vessels on the inner or the outer side of the ovary, according to his desire to remove or leave this organ. In some cases it greatly facilitates the operation to leave one or both ovaries with the corresponding Fallopian tube. When a healthy ovary can be left without difficulty, I prefer to leave it. After the mesometrium is ligatured the tissues are divided up to the tumour, and any bleeding vessel secured with hæmostatic forceps.

I always use silk for ligaturing the vessels ; it is boiled twenty minutes in water and then immersed in a solution of carbolic acid (1 in 20). It is reboiled immediately before use. I make a great point of employing thin silk, and steadfastly endeavour that every ligature shall traverse the peritoneum in relation with the stump.

When the tumour invades the mesometrium, it may so widely separate the Fallopian tube and the round ligament, that it is prudent to secure the round ligament by a separate ligature rather than include it in the same pedicle with the Fallopian tube.

After dividing the mesometria the uterus becomes very free and is easily manipulated. The surgeon then carefully determines the position of the bladder and divides the peritoneum on the anterior and posterior surface of the uterus in such a way as to make them continuous with the opening in each mesometrium, and then detaches the flaps from the uterus. During this process he is able to determine the position of the uterine arteries, and to secure these either by ligaturing them in continuity and then dividing them, or by dividing them and tying the cut ends. Having secured the arteries, the uterus is then cut away above the ligatures, and with the exception of a small spouting vessel here and there in the serous membrane, or on the cut surface of the cervix when the division is made too near the spot where the uterine arteries are tied, the bleeding is controlled. The pelvis

is then cleared of blood, and the anterior and posterior folds of peritoneum are brought into apposition by two or three interrupted silk sutures. Should there be any oozing from the stump, the bleeding may be controlled by passing an additional suture through the flaps at a sufficient depth to include the bleeding vessel in the stump. The edges of the peritoneal flaps are then more closely apposed by a continuous suture of very thin silk.

The sponges and forceps are counted and the wound sutured in triple layers; the cut edges of the peritoneum with a continuous suture of thin silk; the muscles and fascia are then brought together by interrupted sutures of silkworm gut, and the skin edges united by a continuous suture of very thin silk. The wound is dressed with a fold of sterilised gauze, and a pad of cotton wool; the whole is kept in place by a many-tail of flannel.

In the case of a cervix myoma the operation is somewhat modified thus:—

The ovarian and uterine arteries are ligatured as described in the preceding section, and the expanded cervix with the tumour is drawn as far out of the pelvis as possible. The cervix is then incised and the capsule of the tumour freely opened to allow the myoma to be shelled out, but leaving the vaginal portion of the cervix like a shallow cup with a central perforation (the external os). The edges of the peritoneum and the cut margins of the cervix may be brought into apposition with the same sutures.

The advantage of leaving the lower half of the cervix in this way is very great, for all attempts to remove this segment of the uterus greatly endangers the ureters. Indeed, the only safe way of avoiding the ureters is to keep inside the capsule of the tumour; and so well has this plan answered that in all my myoma operations I have never seen the ureters.

The after treatment is conducted on the same lines as ovariotomy. Some patients are able to empty the bladder unaided; others require the catheter many days. During

the first days the rectal tube is passed every three hours in order to prevent flatulent distension of the bowels. The temperature is taken every four hours. It may rise during the first two or three days to 101° without causing alarm, and then gradually subside. Morphia is rarely required. Sutures are removed in eight days, and, as a rule, patients leave the hospital in about twenty-one days. The abominable invention known as an "abdominal belt" I have long discarded.

From a careful perusal of the literature relating to abdominal hysterectomy, it would appear that there are two very important questions to be decided:

1. The superiority or otherwise of supra-vaginal hysterectomy over pan-hysterectomy.

2. The advisability or otherwise of leaving the ovaries when such a course is possible.

So far as pan-hysterectomy is concerned, I am not able to form an opinion, never having performed it. I have seen the ureter injured too frequently by other operators to willingly undertake the removal of the uterus and its neck by the abdominal route. Even in cases of large cervical myomata I preserve the capsule of the tumour, and by keeping strictly within it reduce the risk of injuring one or both ureters to a minimum.

The value of leaving one or both ovaries is a matter demanding careful inquiry, and a large series of cases. Certainly the retention of one ovary during the menstrual period of life leads, in most cases of hysterectomy, to a more rapid and satisfactory convalescence, and assuredly saves the patient the inconvenience of an acute menopause.

This method is a reversal of that which has largely prevailed in this country, namely, removing the ovaries and Fallopian tubes, but leaving the uterus with its tumour. As a matter of fact, patients recover quicker after supra-vaginal hysterectomy than from oöphorectomy. It is now abundantly clear that oöphorectomy is superseded in the treatment of uterine myomata; and clamps and serre-nœuds should only find a place in museums.

Addendum.

This consists of a brief summary of each case drawn up by Dr. Comyns Berkeley, physician to out-patients, and Mr. C. Beauchamp Hall, the resident medical officer to the Chelsea Hospital for Women.

The record concerns twenty-eight cases treated at the Chelsea Hospital for Women and the Middlesex Hospital. Of these the seventh and eighth died. The remaining series of twenty recovered, and is, as far as I know, the longest successful list at present recorded in Great Britain.

I restricted the record of my experience to hospital cases, and the register numbers are carefully given, so that any person may, if he wish, consult the clinical histories in the hospital records.

Case 1 (No. 349, C.H.W. [Chelsea Hospital for Women]).—Aged 45; single. Operation August 10th, 1896. Large multiple myomata (7 lbs.). Both ovaries and tubes removed with the uterus.

Left the hospital well September 1st, 1896.

Case 2 (No. 433, C.H.W.).—Aged 39; single. Operation October 9th, 1896. Submucous myoma, the size of a small cocoa-nut, lodged in the posterior wall. Both ovaries and tubes removed with the uterus.

Left the hospital well November 5th, 1896.

Case 3 (No. 436, C.H.W.).—Aged 45; married; one miscarriage. Menstruation ceased at forty-two. Operation October 12th, 1896. A myoma sessile on the fundus and posterior surface of the uterus weighing 10 lbs. Drainage.

Five years previously, at the Middlesex Hospital, I attempted oöphorectomy and removed the right ovary and tube, but failed to find the left appendages, which patient still retains.

Left the hospital with a sinus November 20th, 1896.

Suture removed July, 1897. Sinus has since closed, and patient reports herself as "remarkably well."

Case 4 (No. 515, C. H. W.).—Aged 52; widow; four children. Operation December 28th, 1896. Oval intra-cervical myoma the size of a small cocoa-nut. Both ovaries and tubes left.

Left the hospital well January 28th, 1897.

Case 5 (No. 1745, M. H. [Middlesex Hospital]).—Aged 32; single; one miscarriage. Operation December 29th, 1896. Large multiple myomata. Uterus and both ovaries removed.

Left the hospital well January 23rd, 1897.

Case 6 (No. 11, M. H.).—Aged 43; single. Operation January 8th, 1897. Multiple myomata of the uterus. Cyst of right ovary as big as a melon adherent in the pelvis. Left ovary and tube removed with the uterus.

Two years before I attempted to remove the tumour, but regarded it as malignant and closed the abdomen.

Left the hospital well February 6th, 1897.

Case 7 (No. 36, C. H. W.).—Aged 38; two children. Operation February 2nd, 1897. Large subserous cervical myoma burrowing into right mesometrium.

Patient died February 6th, 1897.

Post-mortem examination did not reveal any obvious cause of death. No peritonitis.

Case 8 (No. 119, C. H. W.).—Aged 37; married; sterile. Operation March 15th, 1897. Numerous subserous and interstitial myomata growing from the body of the uterus; also a sessile cystic myoma flexed and impacted in the hollow of the sacrum. Both ovaries and tubes removed.

Died March 25th, 1897, temperature reaching 109°.

No post-mortem examination allowed.

Case 9 (No. 123, C. H. W.).—Aged 45; single. Operation March 22nd, 1897. Multiple myomata. Both ovaries and tubes removed.

Left the hospital well April 10th, 1897.

Case 10 (No. 172, C. H. W.).—Aged 41; married; sterile. Operation April 20th, 1897. Interstitial myoma the size of an adult's head. Both ovaries and tubes left.

Left the hospital well June 3rd, 1897.

Case 11 (No. 193).—Aged 33; married; two miscarriages. Operation April 26th, 1897. Large submucous myoma the size of an adult's head. Ovaries and tubes left behind.

Left the hospital well May 31st, 1897.

Case 12 (No. 253, C. H. W.).—Aged 29; single; one child. Operation May 30th, 1897. Interstitial myoma the size of a cocoa-nut. Right ovary and tube removed.

Left the hospital well June 21st, 1897.

Case 13 (No. 279, C. H. W.).—Aged 43; married; two children. Operation June 14th, 1897. Large intra-cervical myoma, and a mucous polypus at the fundus. Both ovaries and tubes removed.

Left the hospital well July 1st, 1897.

Case 14 (No. 285, C. H. W.).—Aged 41; single. Operation June 14th, 1897. Large interstitial myoma the size of a melon. Both ovaries and tubes left behind.

Left the hospital July 1st, 1897.

Case 15 (No. 295, C. H. W.).—Aged 55; single. Operation June 21st, 1895. Submucous sloughing polypus of the fundus. Both ovaries and tubes removed. (The operation in this case was undertaken on the strength of a report from the Clinical Research Association that the disease was cancer of the body of the uterus.)

Left the hospital well July 10th, 1897.

Case 16 (No. 304, C. H. W.).—Aged 35; married; sterile. Operation June 28th, 1897. Submucous myoma the size of a fœtal head. Both ovaries and tubes removed.

Left the hospital well July 15th, 1897.

Case 17 (No. 303, C. H. W.).—Aged 39; single. Operation June 28th, 1897. Large subserous myoma sessile on the fundus of the uterus. Both ovaries and tubes left behind.

Left the hospital well July 19th, 1897.

Case 18 (No. 326, C. H. W.).—Aged 44; single. Operation July 8th, 1897. Subserous myoma of the fundus impacted in the hollow of the sacrum. Left ovary and tube left behind.

Left the hospital well July 30th, 1897.

Case 19 (No. 327, C. H. W.).—Aged 33; single. Operation July 8th, 1897. Multiple pedunculated subserous myomata and two large adherent ovarian cysts removed with the uterus.

Left the hospital well August 4th, 1897.

Case 20 (No. 329, C. H. W.).—Aged 40; married; three children. Operation July 12th, 1897. Two sessile submucous myomata; one gangrenous. Both ovaries and tubes removed.

Left hospital well July 30th, 1897.

Case 21 (No. 344, C. H. W.).—Aged 30; married; two children. Operation July 19th, 1897. Very large degenerating submucous myoma of the body of the uterus. Both ovaries and tubes left behind.

Left the hospital well August 5th, 1897.

Case 22 (No. 1049, M. H.).—Aged 44; married; sterile. Operation August 9th, 1897. Large subserous cervical myoma burrowing into the left mesometrium; both ovaries and Fallopian tubes left.

Left the hospital well September 9th, 1897.

Case 23 (No. 1100, M. H.).—Aged 44; married; sterile. Operation August 18th, 1897. Multiple myomata of the body and fundus; cyst of left ovary size of an egg adherent in the floor of the recto-vaginal fossa; right ovary adherent to the iliac fossa. Both ovaries and tubes removed.

Left the hospital well September 6th, 1897.

Case 24 (No. 386, C. H. W.).—Aged 30; married; sterile. Operation August 23rd, 1897. Multiple subserous and interstitial myomata. Both ovaries and tubes left; the rectum torn but carefully sutured.

Left the hospital well September 10th, 1897.

Case 25 (No. 413, C. H. W.).—Aged 43; single. Operation September 6th, 1897. Multiple interstitial and subserous myomata; two masses, each as large as an orange, growing from the cervix; the anterior tumour pressed on the bladder; both ovaries and tubes left behind.

Left the hospital well September 24th, 1897.

Case 26 (No. 1160, M. H.).—Aged 54; one child. Operation September 8th, 1897. Large intra-cervical myoma. Both ovaries and tubes removed.

Left hospital well September 29th, 1897.

Case 27 (No. 427, C. H. W.).—Aged 48; married; sterile. Operation September 13th, 1897. Multiple myomata. Both ovaries and tubes left behind.

Left the hospital well September 30th, 1897.

Case 28 (No. 1267, M. H.).—Aged 50; married; sterile; epileptic. Operation September 29th, 1897. Multiple myomata of the uterus. Right ovary enlarged and cystic. Both ovaries and tubes removed.

Left the hospital well October 18th, 1897.

An analysis of the ages of the patients is of interest. The youngest woman in the series was twenty-nine, and the eldest fifty-four.

Under 30	1
Between 30 and 40	10
Between 40 and 50	13
Above 50	4
	28

Only one patient (Case 3) had ceased to menstruate previous to the operation.

Mr. Alban Doran insisted that whilst an ovarian cyst nearly always caused death if not removed, a large number of uterine fibroids remained stationary and harmless. Others, however, entailed discomfort and danger, and then the surgeon must consider which was the safest operation. Altogether the retro-peritoneal method seemed the best. He found that in cases where the tumour was large but the cervix free, the operation was especially satisfactory. The arteries were easily reached or felt and secured, the cervix could then be divided, and the healthy mucus which it contained was free from germs. The patient was saved from the inevitable direct and secondary evils of the serre-nœud. This advantage was marked in six very anæmic cases where he (Mr. Doran) had successfully operated; in one there was a sloughing submucous growth which caused no trouble after the operation. He had lost two cases where the operation had certainly been deferred far too long; unhealthy mucus in the cervix was a source of peril in sickly subjects. No operation for burrowing and cervical fibroids could be free from danger; enlarged branches of the uterine arteries were here a source of peril. He objected to leaving Fallopian tubes behind, and always endeavoured to take them away with the uterus, undivided. Their contents were often unhealthy. As to the abdominal sutures, no method was perfect. The numerous reports sent in at the Geneva Congress in 1896 tended to show that in every case the last method adopted by each authority was the best insurance against hernia. The fallacies in such evidence were obvious.

Dr. Playfair said that he agreed with the President as to the great practical interest of Mr. Bland Sutton's paper. It was naturally open to criticism from many points of view, and he should limit himself to one or two only. And first he must take exception to the sweeping conclusion Mr. Sutton had arrived at, that removal of the appendages was not to be performed in any case of fibro-myoma. In his experience, in properly selected cases it was one of the most valuable of operations, and the results were occasionally most brilliant. He was aware that this was not the opinion of the most forward school of hysterectomists either in America or England, who seemed to hold that the mere existence of a fibro-myoma, whether it produced symptoms or not, was a sufficient ground for hysterectomy. This view he held to be most dangerous and untenable. Of course, the cases must be carefully selected; but in a small, hard, very hæmorrhagic tumour, not extending higher than halfway between the pubes and umbilicus, this was the proper course to pursue. Dr. Duncan had shown that evening quite a small fibroid, not bigger than a large orange, which he had removed by hysterectomy. Some of the Fellows had criticised this procedure, and said he should have removed it *per vaginam* by

enucleation. He agreed with the President that enucleation was a dangerous procedure from which he had seen most disastrous results, but he contended that if Dr. Duncan had performed oöphorectomy he would have subjected his patient to infinitely less risk, and have quite as good a result. Indeed, the small mortality—which was practically *nil*—following oöphorectomy was one of the chief grounds for selecting it in suitable cases. Even in Mr. Sutton's cases there had been a mortality of 7 or 8 per cent. Conceive what it would be in less experienced and skilful hands. It seemed to him absurd to compare the risks to which his patients were subjected in performing oöphorectomy and hysterectomy. Only a few days ago he had seen a lady who had been in a terrible state from a bleeding fibroid, on whom he had operated about a year ago. Not only was the hæmorrhage quite stopped, but it was absolutely impossible to detect any trace of the tumour, previously reaching halfway to the umbilicus. This, in his experience, was quite a common result. Of course, in a large, soft, and rapidly growing tumour the result might not be so satisfactory. Another point he might remark on was the operation to be elected. He felt sure that the extra-peritoneal method and clamp were doomed. The long, painful convalescence was most terrible. No fact seemed to him more certain than that the intra-peritoneal plan had come to stay. He was not by any means so sure that pan-hysterectomy would not prove to be the operation of the future. He had been greatly struck with the absolutely perfect convalescence following it, which seemed to him as good as that following complete vaginal extirpation; probably on account, in both cases, of the perfect pelvic drainage. He had seen some remarkable cases of Richelot's in Paris, in which the broad ligament had been clamped from the vagina, and the tumours removed by laparotomy, which were most striking examples of this. But the question could not be settled except by a much larger experience than we now possess. In regard to Mr. Alban Doran's remarks as to the best method of suturing the abdominal wound, he would only say that when he used the old plan of interrupted sutures, he often saw his patients come back with ventral herniæ; since he used buried sutures in layers he had never seen a single case, and as he had invariably used the latter plan for five or six years, ample time had passed to put the matter to the test of time.

Dr. Peter Horrocks was surprised that no mention was made of Baer, who first described the operation. Dr. Galabin published a paper on it, and later Mr. Harrison Cripps brought forward some cases before the Society. At the discussion on that paper, he (Dr. Horrocks) had ventured to describe the operation with the serre-nœud as a barbarous one, and although exception was taken to the word at the time, opinion was now

largely against the so-called old operation. In one case, after using the serre-nœud, the patient had so much pain from the dragging of the pedicle that he opened the abdomen a second time and completed the operation by Baer's method, and the patient had been well ever since. One thing surprised him very much, and that was the large number of cases operated upon by certain operators. He could not but think that in many of these cases no operation whatsoever was required; for it was a well-known fact that fibroid tumours were, in the majority of cases, innocent tumours. They stood on quite a different footing from ovarian cysts, which almost invariably proved fatal when left alone. This point had a bearing on the mortality of Mr. Sutton's cases. For if all the twenty-eight cases were really bad cases of fibroids causing grave symptoms by hæmorrhage, pressure, and the like, then the loss of two, or a mortality of 7 or 8 per cent., could not be called great. He had done the operation twelve times, with one death in a case complicated with albuminuria. Each of these cases was most serious, and none of them so small as some of those on Mr. Sutton's list. He could not agree that the mortality of the operation was as low as that of ovariotomy. He thought 7 per cent. a high mortality in ovariotomy in these days of asepsis. He entirely agreed on one point, namely, the importance of leaving the patient one or both ovaries when these were healthy. He, himself, had done this in several instances, not merely in Baer's operation, but in other operations. He considered it a far greater mutilation to remove the ovaries than to remove the uterus; for after the former a woman became practically unsexed, and the atrophic changes which followed often made her life miserable. Hence he recommended that one or both ovaries should be left behind whenever they were healthy and it was possible to do it. There were cases, however, where it was highly dangerous to attempt removal of the tumour, such as an intra-ligamentous fibroid. In such a case it was better to remove the ovaries in order to cause atrophy of the tumour. Unfortunately it sometimes happened that the ovaries were embedded in the tumour or under it, and so could not be removed separately.

Dr. Roberts thought it was a pity that the history of the cases had not been fully given, particularly as to the points in the symptoms which had rendered the operations described necessary. He could not agree with Mr. Sutton in many points. Surely a very large number of fibroids seen (say, in our out-patient rooms) did not require operation at all, and even if there were symptoms palliative measures should be tried first. Had such been tried in Mr. Sutton's cases? He thought that such teaching as Mr. Sutton's would be very dangerous to junior men and students. He had thought that operations on

fibroids should certainly be delayed till symptoms arose that justified interference, and certainly small fibroids could be treated by other means than by abdominal section. Again, he did not agree with the word "possible" in the synopsis; it was not a question of possibility, but rather "advisability" of operating. Then as to the word "uncomplicated," however Mr. Sutton defined the word, he (Dr. Roberts) could not see how this could be determined before the abdomen was opened. He congratulated Mr. Sutton on his slight mortality, but the mortality must be considered of all cases, easy and difficult, and surely the mortality of severe or difficult operations on fibroids will always be high, no matter who performs the operation or by what method. He thought the sweeping assertions as to clamp and belt made by Mr. Sutton were undeserved; as regards the clamp, Mr. Sutton should not forget that the instrument has been used by other operators with as great success; one welcomed a method by which it could be perhaps superseded, but some cases would still turn up in which a clamp might have to be used. He thought he would still use a belt after an abdominal operation. As regards oöphorectomy, he did not agree that "in all cases it was preferable to remove the uterus;" in fact, oöphorectomy would still hold its ground in certain cases, especially where it was not possible or advisable to remove the tumour and where it was possible to remove the appendages. He thought that the discussion as to who invented the intra-peritoneal method was a small matter, and that it was a pity that people's names should ever be attached to operations or instruments, however successful or perfect.

Dr. William Duncan quite agreed with the author that the intra-peritoneal method of performing hysterectomy was far superior to the extra-peritoneal method, in which a clamp had to be used and the stump left to slough away. He regretted that Mr. Sutton had only given hospital cases in his list, for it was most important that when any new method of treatment was advocated every case operated upon should be given, so that the true mortality could be arrived at. He trusted Mr. Sutton, in his reply, would mention how often he had performed the operation in private, and with what result. He (the speaker) published in the 'Lancet,' about three months ago, a list of eighteen consecutive cases, which comprised every case (hospital and private) he had performed, in which only one death occurred, and that took place on the eighteenth day from pulmonary embolism when the patient was considered convalescent. He quite agreed with Mr. Doran that the appendages should be removed as well as the tumour, for in not a few cases of fibroids of the uterus it is well known that the tubes contain pus, hence a source of danger if these are left. He would like to know why Mr. Sutton removed in some cases one ovary and tube,

whilst in others both were left. Seeing the remarkable success that attended this operation, he was strongly of opinion that oöphorectomy for fibroids should be allowed to lapse into oblivion, even in cases of small tumours; for oöphorectomy in these cases had a mortality of at least 5 per cent., besides which, as was well known, uterine fibroids sometimes grew after the appendages had been removed. By the intra-peritoneal method of operation all cases could be treated; whereas when the clamp was used, the cases were selected. One source of danger in the operation was infection from the cervical canal in the stump, and in order to prevent this, as well as to completely stop any oozing of blood, the speaker always cut out a wedge-shaped piece of the stump and brought the flaps together by a deep continuous silk suture *before* uniting the peritoneal flaps by a continuous Lembert suture; finally, the abdominal walls should be sutured in three layers. Since adopting this method, about three years ago, the speaker had not had a single case of ventral hernia.

Mr. MEREDITH expressed his entire dissent from the views held by the author of the paper regarding the duty of recommending early operation in cases of uterine fibro-myoma, a course rightly adopted in the case of ovarian tumours. The two diseases were not comparable as regards the necessity for operative interference, since the great majority of fibro-myomatous growths did not tend to imperil life, and might never require surgical treatment; while ovarian tumours, on the other hand, inevitably proved fatal unless removed. It should be borne in mind that the fact of recovery after an operation by no means absolutely implied that the treatment adopted was a necessary procedure. The author's views on the value of the *intra-peritoneal* treatment of the uterine stump would appear to be founded upon somewhat insufficient data, viz. the results of only 28 operations, of which 2 proved fatal. The speaker's experience with the serre-nœud had given him 83 recoveries out of a succession of 90 abdominal hysterectomies, including a run of 30 cases without a fatality, and two series of 40 and 47 cases respectively with but 2 deaths in each—results which had not as yet, so far as he knew, been equalled by advocates of the intra-peritoneal method. At the same time, however, he fully recognised the advantages of the shorter convalescence required by this latter plan of treatment, and he had, therefore, now adopted it for some six months past with very satisfactory results. Mr. Sutton did not hesitate to say that the operation of oöphorectomy had now been entirely superseded by intra-peritoneal hysterectomy, and here again he (Mr. Meredith) was unable to agree with him, as he still considered the operation in question to be a most valuable and efficient method of treatment in suitable instances, giving a mortality in his experience of something under 3 per cent. A

considerable proportion of cases of abdominal hysterectomy, especially where the lower segment of the uterus is tolerably free from growth, would recover easily whether the stump be secured by the serre-nœud or by ligature; but, on the other hand, many tumours were to be met with which would tax to the utmost the knowledge and skill of the operator, and the wise surgeon would reserve to himself the power of selecting in any given instance the method of treatment which from his own experience he deemed most likely to secure the best result for his patient.

Mr. Butler-Smythe thought credit was due to Mr. Bland Sutton for so clearly pointing out the additional risks attending the performance of the so-called pan-hysterectomy. These risks were not imaginary, but there was a real danger to the ureters, one or both of which might easily be cut across or included in the lowest ligature. The preservation of the vaginal portion of the cervix in the operation of supra-vaginal hysterectomy went a great way towards the safety of the patient, and he felt sure that if the operation termed pan-hysterectomy became an every-day operation, the mortality would advance by leaps and bounds. His ideas on the subject under discussion were so absolutely opposed to the views held by Mr. Bland Sutton, that he would like to ask him what the signs and symptoms were which would lead him to perform hysterectomy? In his opinion not one fibroid in twenty required removal,—and he was now speaking of large tumours, and not of those similar to the one exhibited that evening. It would take much talking to convince him that uncomplicated fibro-myomata necessitated removal of the uterus, with or without the ovaries or tubes. He quite endorsed all that had been said by Dr. Horrocks and Mr. Meredith relative to the plain duties of the doctors to the patients with uterine myomata, and he hoped Mr. Bland Sutton's doctrines would not be accepted by other operators.

Dr. Griffith entirely agreed with those who held that the intra-peritoneal method was the preferable operation. No one who had followed the progress of many cases operated on by the two methods would hesitate to admit the greater freedom from suffering during convalescence and general well-doing exhibited by patients after the intra-peritoneal operation. It must follow that the mortality of the intra-peritoneal method in the hands of experienced operators would fall below that obtained by the best operators who use the serre-nœud. His object in speaking, however, was to express his conviction that the operation of enucleation of fibroids in suitable cases was with proper anti-septic methods a very safe and preferable operation, leaving the patient with a perfect uterus as well as ovaries. The terms of condemnation used by many were well deserved a few years ago, but Smyly and others had demonstrated the safety and excellent

results of the operation, and his (Dr. Griffith's) experience was quite in accordance with theirs.

Mr. Malcolm thought that something could be said in favour of the serre-nœud. Its disadvantages were the long convalescence, the many dressings of the sloughing pedicle, and the dragging pain during the first few days after convalescence; but when these were overcome, and when the patient had recovered from the operation, her general condition was, as a rule, so very satisfactory that it probably could not be improved upon. The cases related were too recent for comparison in this respect. The question as to which operation was the best would, however, depend on the mortality, and the speaker did not think it at all proved that the newer method was the better one in this respect. Hitherto it had been the practice to operate only on cases showing serious symptoms Now it was suggested that these cases were comparable to those of ovarian tumour, and it was said that "the earlier the tumours are removed the less the operative dangers." If cases were to be selected for operation in this way, the death-rate ought to fall very much, but a great many cases would have hysterectomy performed in which life was not threatened; and, moreover, in many cases of small tumours the women were capable of bearing children and being delivered at full term without any great risk.

Dr. Heywood Smith said it was a cause of great gratification to him to find that the method of performing hysterectomy which he had advocated five years ago was gradually creeping into favour, and seemed likely, at no distant time, to supersede all others. It was in 1892 that he read a paper elsewhere on subperitoneal hysterectomy,—which, he contended, described the operation better than intra-peritoneal,—in which paper he brought forward some cases by Goffe, of New York, and Milton, of Cairo, as well as some by himself; and he was glad to find the most advanced operators were pursuing that method to the exclusion of the serre-nœud, oöphorectomy, and so-called panhysterectomy. The only thing that could be said in favour of the clamp was that the operation was easier and more quickly performed. With regard to what had been said as to fibroid tumour of the uterus not being a fatal disease, and therefore not requiring so heroic a treatment, cases arose where fibroids did indeed threaten life, and we should give Mr. Bland Sutton the credit of having, in good faith, done the best for his patients. Besides, in our prognosis due consideration should be given to the status of the patient. Where a patient was well off she might afford to lie up and take care of herself, but where, in the majority of cases, the patient had to work hard for her living, the existence of a bleeding and painful tumour caused her grave risks, and it was our duty to relieve her, as far as lay in our power, from all the consequences of so grave a malady.

The PRESIDENT said he had had an opportunity of declaring his views on the subject before them so recently—namely, in the discussion which took place last year upon Mr. Harrison Cripps's paper—that he would not occupy more than a few minutes with his remarks on the present occasion. He agreed with Mr. Bland Sutton in regarding the operation he had described as superior to that of so-called pan-hysterectomy, and he did this on the same grounds as Mr. Sutton. It could be performed more quickly, and it exposed the bladder and the ureters to less danger. He also agreed with Mr. Sutton as to the desirability of leaving, if possible, one or both ovaries. The trend of modern surgery was in the direction of removing nothing that could be avoided, and in sparing, wherever possible, both in male and female, one or both of the essential organs of reproduction in operating for diseases in which those organs were involved. He (the President) had performed the operation advocated by Mr. Sutton from forty to fifty times, and believed it to be an exceedingly good operation. He had had excellent success with the old operation (though he had never liked it), and had adopted the newer one with some misgivings. For a long time he had continued to provide himself with a serre-nœud in case of need, but the occasion had never arisen, although he had met with almost every conceivable complication in the course of his operations, and he had now ceased to take the serre-nœud with him.

Mr. BLAND SUTTON, in reply, expressed amazement at the singular course the discussion had taken, He never for a moment anticipated that the horrid clamp would find a single supporter, yet several operators still advocated its use! He reminded the assembled Fellows that in Heister's time (1739) the mamma as well as other accessible organs were removed by clamps; it was at one time the common method of dealing with the pedicle in ovariotomy, but no man would dare to adopt the method to-day. The clamp in the treatment of hysterectomy was equally doomed, and he ventured to predict that in five years' time no operator would be found foolish enough to advocate its use; its employment would vanish like the horrible engines of the Inquisition. He stated that his first attempt to perform supra-vaginal hysterectomy by means of ligature was made in 1890; on that occasion at a consultation with his surgical colleagues he deliberately stated that he intended to secure the arteries with ligatures, and drop the stump into the pelvis. The operation differed from that described in the paper in the fact that, after securing the ovarian and uterine arteries he transfixed the cervix, and did not sew the peritoneal edges over the stump. The patient recovered, and left the hospital in eighteen days. She discharged the cervical ligature through the vagina six months later, and is at this date in excellent health. The

weak point in the operation consisted in transfixing the cervix, and the credit of demonstrating this belongs to Baer; but the operation described in the paper differs in some details from that described by the American surgeon. He (Mr. Bland Sutton) had practised oöphorectomy for myomata extensively, and the immediate results were excellent when it was possible to remove the ovaries completely, but many operations intended to be simply oöphorectomies became of necessity hysterectomies; but as the improved hysterectomy gave such excellent results, and was followed by a convalescence more rapid and a result far more satisfactory than oöphorectomy, he had of late completely abandoned this operation. He did not prepare the paper with any idea that it was necessary to defend the removal of uterine myomata. Like every right-minded surgeon, he was always anxious to avoid unnecessary mutilation. Whenever it was possible to remove a submucous myoma through the vagina and save the uterus, he preferred it, and had on several occasions turned the bladder off the uterus, split the cervix anteriorly, and successfully extracted the myoma. The enucleation of submucous myomata was often difficult, and like all difficult operations was not devoid of peril to life. Abdominal myomectomy he had performed many times without a single death, and was happy to report that some of his abdominal and vaginal myomectomy patients had subsequently become the happy mothers of children. In deciding whether a given uterine tumour, which was a source of trouble (hæmorrhage, sepsis, or pressure), should be dealt with by the vaginal or abdominal route depended on many things besides the aptitude and experience of the operator. Surgery was full of pitfalls, and in dealing with pelvic tumours there was room for great difference of opinion in diagnosis as well as in treatment; we must all be charitable, and believe that every man brought face to face with grave conditions, honestly does his best for the welfare of the patient, and whilst relieving her of troublesome tumours, does so by methods which he earnestly believes to be the safest as well as the surest. A complicated hysterectomy—by this he intended to signify a myomatous uterus with hydro- or pyosalpinx, adhesions to bladder or bowel, or associated with single or double ovarian cyst—was often one of the most difficult operations in the whole range of surgery, and no one undertook the operation with a light heart. In regard to the wound, he said a yielding cicatrix after any form of abdominal operation in which the wound was secured by a single row of sutures is, in a certain proportion of cases, inevitable. Even Dame Nature had failed to secure a perfect scar in her great operation of making the belly. The linea alba is a natural scar, yet in thousands of men and women hernial pouches formed in it; and the strongest scar of all—the navel—frequently became distended into a pouch, even in advanced life. Thus, if nature cannot accomplish the forma-

tion of a perfect cicatrix, it is presumptuous for the surgeon to expect to always succeed in obtaining a non-yielding scar. On the whole question of the paper, Mr. Sutton expressed the opinion that the intra-peritoneal operation had a great future before it, and by its means our power of doing good to our patients is vastly increased, and this is the one great cause all the Fellows of the Society had nearest their hearts.

DECEMBER 1st, 1897.

C. J. Cullingworth, M.D., President, in the Chair.

Present—46 Fellows and 5 visitors.

Books were presented by the Royal Medical and Chirurgical Society, the American Gynecological Society, the Council of University College, London, the 'Deutsche Gesellschaft für Gynäkologie,' the 'Gesellschaft für Natur und Heilkunde in Dresden,' 'Del medicinske Selskat i Kobenhavn,' Drs. John Phillips, Kleinwächter, Herbert Spencer, Lewers, and Mr. Walter Heape.

Guy Bertram Hollings, M.B., B.S., and Robert Gordon McKerron, M.B.Aber., were admitted Fellows of the Society.

Edward Fluder Chinery, M.R.C.S. (Lymington); Courtenay C. Weeks, L.R.C.P.Lond. (Pinckbeck); and B. H. Nanavatty, L.M.&S. Bombay (Ahmedabad), were declared admitted.

The following gentlemen were proposed for election:—David J. Evans, M.D.McGill (Montreal); Alfred Walker, M.D., B.C.Cantab.; Thomas Cullen, M.D.Toronto (Baltimore); Trevethan Frampton, L.R.C.P.; George A. Auden, M.B., B.C.Cantab.; Henry Menzies, M.B.Cantab.; Henry Macnaughton Jones, M.B., B.Ch.; and S. Jervois Aarons, M.D.Edin.

A PECULIAR MUCOUS POLYPUS OF THE CERVIX UTERI.

Shown by Dr. McKerron, for Wm. Stephenson, M.D., Professor of Midwifery, Aberdeen.

The patient from whom this polypus was removed is unmarried, about 40 years of age, and has always enjoyed robust health. She is well nourished, has a good colour, and has led an active life. Menstruation previously had always been regular, ordinary in quantity, and free from pain.

For about three years before consulting me she had suffered more or less from excess of menstrual discharge, very free leucorrhœa of a watery character without odour, and was liable to intermenstrual hæmorrhages coming in sudden gushes, continuing for about twenty-four hours, and recurring at irregular intervals.

Upon my explaining the necessity for a vaginal examination, she stated that recently she had observed that at times something soft protruded at the orifice of the vagina, and went back when she lay down. On examination a soft long polypus was readily recognised, with a narrow attachment to the cervix just within the external os. It was easily removed by a snip of the scissors. There was no bleeding; the leucorrhœa disappeared, and menstruation became normal.

It is now two years since the operation, and I recently had an opportunity of examining *per vaginam*; there was no renewal or fresh growth.

Report on the polypus by Wm. Pirie, M.B., C.M., Aberdeen.

The preparation has shrunk somewhat by being preserved in spirit. It now measures 82 mm. in length, and 38 mm.

at its greatest width. It is throughout soft in consistence and pale in colour. From the short narrow pedicle by which it was attached one portion of the polypus spreads out in a thin-walled cap or bell-shaped form, with concavity downwards, and into which the thumb to near the first joint can be passed. From this body four finger-like processes hung. The two smaller of these, about 13 mm. in length, were removed for histological purposes; the two larger are respectively 40 mm. and 50 mm. in length.

The bell-shaped portion or body has a consistence of wash-leather, whilst the processes are firmer and more fibrous. On the convex surface are seen ribbed or cord-like thickenings, radiating from the point of attachment towards the free edge, and the same ribbed-like structure is seen passing down one side of each of the processes. They vary in thickness from a sewing thread to that of a crow quill. The processes further present a rugose appearance which has become more pronounced by the shrinking. The two larger are tubular or "channelled" throughout their length (in the preparation, as may be seen also in the photograph, a glass rod has been passed along one.) The lumen is about the size of a goose quill, and is somewhat triangular in shape, the apex being formed by the cord-like ridge.

Microscopic sections were made from the two smaller processes, and stained with logwood and eosin and picro-carmine; all showed essentially the same structures.

Microscopic characters.—Externally is seen a covering of epithelium, the outer layers of which stained feebly and seemed to be keratinous; while the innermost cells showed very deeply stained nuclei, and in non-clarified sections numerous prickle-cells. The epithelial covering varied much in thickness, greatest about the middle of the process, whilst at the tip it was reduced to a single layer, probably by erosion. The epithelium was transitional in type, resting on a distinct basement membrane.

The stroma proper consists of a loose meshwork of

delicate fibrous tissue, the nuclei of which stained deeply. Scattered throughout are groups of small round connective-tissue cells; a layer of these of variable depth could be traced in most sections all round immediately beneath the basement membrane, and at the free end the open meshwork gave place entirely to a dense mass of these cells which were deeply stained, very little connective tissue being left.

Here and there, but most distinctly in the middle of the process, can be seen bands of what seemed to be involuntary muscle, running parallel to the long axis. The tissue is highly vascular; some of the vessels are of fair size, and partially filled with blood-corpuscles. The capillaries are specially copious around the active growing cells at the tip of the process.

In various situations are a number of cavities in all stages of development—some being merely round nests of

FIG. 1. FIG. 2.

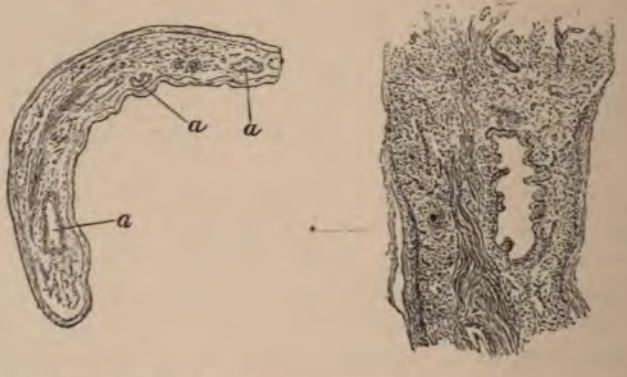

FIG. 1.—*a*. Cystic cavities in process lined by epithelium, which shows large well-marked lower cylindrical ciliated structure.

FIG. 2.—General outline of one of the cavities and the bands of delicate connective tissue appearing in the general stroma. The edges of the section seem covered with stratified epithelium.

epithelium without any central space; others, evident to the naked eye, show a cavity filled with a homogeneous

material, and lined by a single layer of columnar epithelium, in some of which a ciliated appearance is very marked. The larger sized are slit-like, running a considerable distance in the stroma; while often two or more smaller ones, near a larger, seem about to join it to form a common

FIG. 3.—Mucous polypus of the cervix uteri attached to the inner margin of the os; showing the thin, widened, bell-shaped body.

cavity. In none could any communication with the external surface be found.

The central cavity was found running the whole length, as is seen in the larger processes, the two selected for

embedding being smaller than the others, evidently of more recent growth and not yet fully developed. As the central canal is a marked feature of the larger finger-like processes, it seems probable that the "channelling" is produced by the coalescence of the cysts or cavities seen in the less developed process rather than by a prolongation of a single gland.

This growth thus presents marked peculiarities in form and mode of growth, some of which it is difficult to explain. In its minute structure or constituent elements it resembles in many respects various mucous polypi described by different writers, but it lacks the character of a rounded mass common to these, and has in its bell-shaped body and hanging finger-like processes a form peculiarly its own.

In exhibiting this specimen he (Dr. McKerron) had been asked by Professor Stephenson to make a few explanatory remarks. It would be seen that the preparation presented a most unusual appearance for a uterine polypus. It was attached by a short pedicle to the cervix just inside the os. From this attachment a small bell-like projection grew, from the margin of which depended four finger-like processes. The two smaller had been removed for histological purposes. The two larger, it would be seen, were tubular or channelled throughout their length. Microscopic examination of the smaller processes showed an external covering of transitional epithelium lying on a basement membrane. The stroma consisted of loose fibrous tissue. No central canal was to be seen in the smaller processes, but a number of cysts in all stages of development—some being merely nests of epithelium; others, evident to the naked eye, showed a cavity lined by epithelium. Here and there two or more smaller cysts near a larger seem about to coalesce with it to form a common cavity. In this way Professor Stephenson suggests the channelled character was produced.

CASE OF DOUBLE PYOSALPINX, WITH ENLARGED BLADDER AND SECONDARY RENAL COMPLICATION.

Shown by Dr. MACNAUGHTON JONES.

Dr. MACNAUGHTON JONES showed the uterus and adnexa of a patient aged 42, a multipara, who had consulted him early in July last. She was then suffering from an overdistended bladder and partial incontinence. At her first visit to him five pints of urine were drawn off by the catheter. At that examination, and subsequently during anæsthesia, a hard mass was found filling the pelvic brim and pushing the uterus upwards out of the pelvis. The retention had been brought about by unavoidable overdistension of the bladder some three weeks previously to his seeing her. She had never at any time before complained of pelvic symptoms, nor had she suffered any pain. There had been frequent recurrent malarial attacks, first contracted in the tropics. During the first week she was under observation she passed daily from six to seven pints of limpid urine, sp. gr. 1010, and there was a slight deposit composed entirely of pus. There were some hyaline casts present. After undergoing treatment, with the object of reducing the quantity of the urine, she was operated upon on the 20th of August, when oöphorosalpingo-hysterectomy was performed. The sound passed into the bladder before operation reached to within 2 inches of the umbilicus. The operation was extremely difficult, owing to the mass of adhesions at either side and the large size of the pus sacs, the right one being the size of a cricket ball, and the left of a goose's egg. The tubes also were enormously thickened. The iliac vessels were bared by the stripping off of the capsule for some distance at the left side. The uterus was removed with the adnexa by the intra-peritoneal operation. The drainage was made through the abdominal wound from Douglas's pouch.

The kidneys were examined, and the right found to be enlarged.

The course of the case was at first most satisfactory, and nothing untoward occurred until after the sutures were removed, when the temperature again rose, and a swelling gradually occurred in front of the rectum, pressing into the vagina. This was opened on September 28th, the pus evacuated, and a drainage-tube inserted. The temperature fell and remained normal for some time, rising again at the end of September. Being uncertain as to the cause of the hyperpyrexia, and the possibility of some pus being yet concealed at either side, the pelvis was again explored through the abdomen on October 16th, but nothing could be detected. The urine still contained some pus.

From this time the patient progressed most favourably. The temperature gradually fell, and she was able to leave for the seaside a month ago, and is now thoroughly convalescent.

Mr. BLAND SUTTON remarked that the carefully dissected and prepared specimen gave very little notion of the real difficulties of the operation. As a matter of fact they were very great. It was the first occasion in his experience that a double pyosalpinx had produced such pressure on the urethra as to cause retention of urine. On this point he would be glad to get the opinion of the President.

The PRESIDENT said that Dr. Macnaughton Jones was to be congratulated on the successful issue of an exceptionally difficult and trying operation. Such a case must be regarded as a surgical triumph. He desired to call special attention to one point in the history, namely, that notwithstanding the extensive disease in both Fallopian tubes, and the universal matting of the entire contents of the pelvis, there had been no pain. A few years ago, when he (the President) had spoken at that Society of salpingitis as being usually unattended with pain up to the moment when the peritoneum became involved, the statement was characterised by a distinguished authority as absurd. Subsequent experience had, however, confirmed him in the view then expressed, and this case strikingly corroborated it. In reply to Mr. Bland Sutton, he said he was unable to recollect any case of purulent salpingitis in which, as in this instance, retention of urine had been the main symptom.

TWO FIBROMATA REMOVED BY INTRA-PERITONEAL HYSTERECTOMY.

Shown by Dr. Macnaughton Jones.

Dr. Macnaughton Jones showed two fibromata removed by intra-peritoneal hysterectomy, one a case of a sprouting fibroid, which, doubled on itself, filled Douglas's pouch, and had been naturally mistaken in its earlier stages for an enlarged retroverted womb. The patient made a rapid recovery. The second was a tumour removed from a woman aged 30, blanched and anæmic from repeated hæmorrhages. The uterus was removed in the same manner, and the patient has done well.

CARCINOMA OF BODY AND MULTIPLE FIBROMATA OF UTERUS REMOVED BY ABDOMINAL PAN-HYSTERECTOMY.

Shown by Mr. J. H. Dauber.

The patient, Mrs. R—, a cachectic-looking woman aged 57, a widow, nulliparous, whose menopause had occurred seven years previously, was admitted to the Hospital for Women, Soho Square, on September 22nd.

She had suffered for the last one and a half to two years from pain in the abdomen and a watery sanguineous discharge, which had latterly become very offensive.

On vaginal examination the uterus was found retroverted, and only moveable to a very limited extent. It was much enlarged with fibroid nodosities, almost filling the pelvis. Cervix normal, os small, vagina much contracted.

Patient was curetted on September 25th, about a cupful of sloughy necrotic tissue being removed. Microscopical examination revealed no definite structure in fragments removed.

On October 11th the uterus was removed through the

abdomen in the usual way, the vagina having been previously most carefully disinfected, and the uterus plugged with cyanide gauze. The vaginal method of removal seemed not to be feasible owing to the disproportion between the size of the uterus and vagina, and the uncertainty whether the uterus could be raised and freed from the pelvis.

The recovery was uneventful, although the patient's stay in hospital was prolonged owing to an accidental burn from a hot bottle on the right leg. The temperature never rose above 100·4°. Mr. Dauber sewed up the abdominal wound in layers, and the scar being linear and firm, he followed Mr. Bland Sutton's example and sent the patient out of the hospital without a belt. On microscopical examination the uterus was found to be the seat of extensive carcinoma, which was, however, confined to the body, and had not spread to the peritoneum, broad ligament, or cervix. Many fibroid nodules, intra-mural and sub-peritoneal, varying in size from a Tangerine orange to a pea, were also present.

Dr. Amand Routh alluded to the supposed rarity of the combination of fibro-myoma and carcinoma of the uterus, and pointed out that the rarity was greatly over-stated, for during this session two other specimens had been shown, besides that of Mr. Dauber; namely, one by himself, and one last week by Dr. McCann. The two latter were both removed by vaginal hysterectomy.

MICROSCOPIC SECTIONS OF UTERINE MUCOUS MEMBRANE.

Shown by Dr. Lea.

Dr. Lea showed the following specimens:

1. Uterine mucous membrane, eighth day of menstruation.

2. Uterine mucous membrane, eighteen hours after cessation of menstruation.

THREE CASES OF PYOMETRA COMPLICATING CANCER OF THE CERVIX UTERI.

By Walter W. H. Tate, M.D.

(Received October 18th, 1897.)

(*Abstract.*)

According to Bürkle's statistics, compiled from German operators, pyometra occurred as a complication of cancer of the cervix in seventeen out of a total of 273 cases, giving a percentage of 6·2. The author has met with this condition in three out of twenty-eight cases of vaginal hysterectomy for cancer of the cervix.

Case 1.—Mrs. R—, aged 60, widow, nine children. Menopause at forty-five. History of slight discharge, occasionally blood-stained, for two years, offensive in character for last six months. Cervix greatly enlarged and infiltrated with cancer, which formed a large mass filling upper part of vagina. Vaginal hysterectomy 9th July, 1897. Uterus contained three or four ounces of most fœtid pus. Recovery.

Case 2.—Mrs. R—, aged 61, married, nine children. Menopause at forty-five. History of slight blood-stained vaginal discharge for nine months, more profuse for three weeks before admission to hospital. Cervix hard and infiltrated with cancer; shallow ulcer around external os. Uterus not apparently enlarged. Vaginal hysterectomy 30th July, 1897. Cervical canal practically occluded; uterus distended into a sac, which contained about three ounces of very fœtid pus. Recovery.

Case 3.—Mrs. B—, aged 65, married, seven children. Menopause at forty-one. Occasional blood-stained discharge for four

years at intervals of a fortnight; for five weeks before admission discharge purulent and offensive. Cervix enlarged and very hard, with irregular ulcerated surface towards the vagina, which bleeds very freely. On examination body of uterus enlarged and elastic, obviously containing fluid. Vaginal hysterectomy 26th August, 1897. Uterus contained three and a quarter ounces of very fœtid pus. Recovery.

I HAVE ventured to bring the following cases before this Society, as the condition does not appear to be a very frequent complication of cancer of the cervix, and the cases seemed to present some features of interest. Dr. Sinclair, in his article on cancer of the uterus in Allbutt and Playfair's work, quoting from Bürkle's summary of operations up to 1892, states that out of 273 cases of vaginal hysterectomy for cancer of the cervix, the disease was complicated with pyometra in seventeen of the patients; this gives a percentage of 6·2. Out of a total number of thirty-one vaginal hysterectomies which I have performed for cancer of the uterus, twenty-eight cases were for cancer of the cervix, and in three of these the disease was associated with a collection of pus in the body of the uterus, converting the latter into a cyst-like swelling. This gives a percentage of nearly 11, but this increased proportion is no doubt accidental, and due to the smaller number of cases observed. Curiously enough, these three cases of pyometra all occurred in the last five operations performed.

The following is a short account of the principal features in each case:

CASE 1.—Mrs. R—, aged 60, was a widow who had had nine children. The climacteric occurred at the age of forty-five. After the menopause she remained perfectly free from all discharge till two years ago, when she began to lose blood occasionally at odd times—sometimes when the bowels acted. Six months ago the discharge became a little offensive, and it continued so at intervals up to

the present time. There has, however, been very little hæmorrhagic discharge. She thinks she has lost a little flesh lately, and has had occasional shooting pain, but no constant pain. She was sent up from Pembroke in July last to consult Dr. Cullingworth, and he kindly recommended her to me for operative treatment.

On examination her general condition was found to be extremely good. *Per vaginam* the cervix was greatly enlarged, and infiltrated with growth, which projected into the upper part of the vaginal roof. The growth was very friable, and bled freely on examination. The mobility of the uterus was only slightly impaired. Some thickening was felt in the situation of the right broad ligament, but it was thought that removal of the uterus would at any rate give great relief, even if it were not a curative operation.

On the 9th July last I performed vaginal hysterectomy. After the patient was anæsthetised, the body of the uterus was found to be increased in size, but the cause of this enlargement did not occur to me. I need not take up the time of this Society with any detailed account of the operation. Some little difficulty was found in drawing down the cervix within view, owing to the friable nature of the growth, and also to the enlarged uterus. The exact nature of the enlargement was only discovered on endeavouring to draw the body of the uterus through the vagina after ligature of the lower part of the broad ligament. In this procedure the thinned and softened uterine wall tore through, and about three or four ounces of foul-smelling pus escaped. Free irrigation with corrosive sublimate solution (1 in 2000) was kept up during the remainder of the operation. The patient recovered without any bad symptoms, and left the Home three weeks after the operation.

In the uterus removed, the disease was found to have infiltrated the whole cervix up to the internal os, and the body of the uterus was distended into a flaccid sac. The specimen was so damaged during removal that it did not appear to me to be suitable for preserving.

Case 2.—Mrs. R—, aged 61, was sent to Dr. Amand Routh at the Samaritan Free Hospital last July. As the hospital was shortly closing for annual cleaning, he asked me to take her into St. Thomas's Hospital. This patient had had nine children, and the menopause occurred at the age of forty-five. After this her health was perfectly sound up till nine months ago, when she began to lose blood *per vaginam*. At first this occurred in quite small quantities, with intervals of a fortnight or so free from discharge. During the three weeks before her admission the discharge had been continuous, with occasional small clots. She had had no pain whatever, and there had been no loss of flesh. On admission on the 24th July of the present year, she was seen to be a stout, healthy-looking woman.

On examination, the vaginal portion of the cervix was found atrophied, and flush with the vaginal roof. The cervical canal was a little excavated in the lower part, and presented an irregular ulcerated surface, which bled very readily. The uterus did not appear to be enlarged, but owing to the thickness of the abdominal wall, bimanual examination was not very satisfactory. The uterus was freely mobile, and there was no evidence of extension of the disease to the cellular tissue on examination *per vaginam* or *per rectum*.

Vaginal hysterectomy was performed on the 30th July, 1897. The steps of the operation were the same as usual. I may say that in all my operations I employ the ligature for securing the broad ligaments. I did not recognise that I had to deal with another case of pyometra until I had ligatured the lower part of the broad ligament on either side, and opened the pouch of Douglas. On introducing two fingers and feeling the enlarged elastic body of the uterus, the nature of the case became at once apparent. Very great difficulty was experienced in bringing the enlarged body of the uterus through the vagina, and during the manipulation the uterine wall gave way, and a considerable quantity—about three or four ounces—of greenish, extremely fœtid pus escaped from the

uterine cavity. After the escape of this, the operation was completed without any difficulty. The highest temperature after the operation was 99·8°. The patient made a good recovery, and left the hospital at the end of three weeks.

Case 3.—Mrs. B—, aged 65, was sent up to St. Thomas's Hospital by Dr. Homer Scutt, of Egham. Patient was a married woman, and had had seven children. The menopause occurred at the age of forty-one. Four years ago patient first noticed a slight blood-stained discharge, which appeared at intervals of about a fortnight, and lasted for two or three days. The discharge was quite free from odour, and was unaccompanied by pain. It continued on and off in this fashion till five weeks ago, but during the last five weeks it has been continuous, and has become purulent and offensive. Patient has been losing weight, and her sleep has been interfered with.

On vaginal examination the cervix was very much enlarged and hard. The vaginal portion presented an irregular ulcerated surface, which bled very readily. It was not, however, friable. The uterus was also enlarged to the size of a small orange, and distinctly elastic ; and judging this case by means of the experience derived from the two previous ones, it seemed certain that this enlargement would prove to be another case of pyometra. The disease had not extended to the vaginal walls, but on the left side the broad ligament was found somewhat thickened. The mobility of the uterus was practically unaffected.

Even though there was some thickening in the situation of the left broad ligament, I advised the patient to have the uterus removed as a palliative measure, as there seemed to be very great risk in leaving the case without operation.

Vaginal hysterectomy was performed on the 26th August, 1897. In the course of the operation pus began to escape from the cervix—the same offensive-smelling pus that I have mentioned in the two previous cases. As

I was anxious to keep the field of operation clean, a silk ligature was tied round the cervix to prevent further escape. Later on, however, it was found impossible to bring the enlarged uterus out through the vagina, so the ligature was cut and about two ounces of pus allowed to escape. The cervix was then clamped to prevent further escape, and the operation was completed in the usual manner. After removal of the uterus, an incision was made along the anterior wall, and it was found to contain another ounce and a quarter of fœtid pus. The growth was found to block the cervical canal almost entirely. The mucous membrane of the uterus was deeply injected, but not ulcerated. The patient made a good recovery, and was discharged on the 25th September last. The highest temperature after operation was 100°.

You will notice that in all the cases described, the patients were many years past the menopause—two of them being sixty-one, and the third sixty-five years of age. The carcinoma developed, therefore, at a period when one expects to find an atrophied condition of the cervix. In such a cervix it is easy to understand how blockage of the cervical canal by growth can readily take place, and following on this, discharges possibly arising from a senile endometritis may become pent up in the uterus, and become infected from the breaking-down growth. So far as one could see, the disease of the cervix appeared to almost entirely block the cervical canal in each of the three cases described. Blockage of the cervix does not, however, appear to be a necessary condition for the development of a pyometra. According to Dr. Galabin, the uterus may become distended either in cases of obstruction to outflow through the cervix, or by disease of the walls of the uterine body without any obstruction to the outflow of discharges through the cervix.

In the year 1880 Dr. Galabin showed before this Society a specimen of pyometra, which he obtained from a patient aged seventy, who had had a purulent vaginal

discharge for several years. The uterus was distended into a cavity measuring three inches in diameter, filled with pus, but there was no obstruction to the cervical canal. On naked-eye examination there appeared to be no evidence of malignant disease, but microscopic examination showed evidence of carcinoma just above the internal os. The case is of interest inasmuch as it showed that distension of the uterine body with pus may occur in the absence of any obstruction to outflow. In looking through the 'Transactions' of the Society, I find that four other examples of this condition have been recorded. Two of these were shown by Dr. Matthews Duncan in 1879, one being secondary to atresia of the cervix by carcinomatous disease, the other occurring in a woman aged sixty, who had had periodic discharges of pus for three years. She suffered daily from attacks of intense agonising pain. The os uteri was quite healthy, but the uterus was distended with thick fœtid pus, and the mucous membrane was in a state of acute inflammation. A third interesting case was recorded in 1887 by Dr. Griffith, in which the pyometra developed secondary to obstruction of the uterine canal by a large fibroid in such a manner that the cervical canal was completely shut off from the upper part of the uterus, which was converted into a pyometra. Only last year Dr. Lewers showed before this Society a case of pyometra secondary to a carcinomatous cervix. He started the operation with the intention of performing a supra-vaginal amputation, but owing to the disease extending above the level of the internal os, he had to remove the whole uterus.

A considerable number of other cases of pyometra have been recorded in which the condition was associated with imperforate hymen, or followed cicatrisation of the cervix or vagina from damage during parturition or from ulceration of non-malignant character. Quite a large number of cases of lateral pyometra have been recorded secondary to uterus bicornis and uterus septus. Many of these cases are extremely interesting, and may give rise to

considerable difficulty in diagnosis, but they form a distinct series of cases quite outside the scope of this paper.

So far as the symptoms are concerned, there was nothing to suggest the fact that the uterus was distended into a sac containing three or four ounces of very offensive pus. In none of my cases was there any of that severe spasmodic pain which is frequently present in cases of *cancer* of the uterine *body*, and which one might have expected to be present owing to the distension of the cavity with pus. Neither was there any elevation of temperature due to septic absorption.

As regards diagnosis, in none of the cases described above was the amount of pus within the uterus sufficiently large to give rise to any doubt as to the enlargement being uterine. No doubt in some cases of pyometra arising from congenital malformations, and possibly in some cases where there is a large collection of pus *in utero* due to atresia of the cervix or vagina, a correct diagnosis may sometimes be very difficult to arrive at. Where, however, in cases of malignant disease of the cervix, one finds on bimanual examination a uterus which is enlarged and distinctly elastic, the probability of such swelling being caused by distension of the uterine cavity with pus should be thought of, and in any such case the complete extirpation of the uterus should be the operation selected.

In all the three cases the pus was extremely fœtid—one might almost say characteristic.

In considering the effects of the presence of the pyometra on the operation, there is no doubt that the enlarged uterus adds somewhat to the difficulty of the operation. The uterus does not come down so readily when traction is made on the cervix, and there is greater difficulty in delivering the uterus through the vagina. This is especially marked where there is much senile contraction of the vagina. Next one may ask, "Does the soiling of the field of operation with the offensive-

smelling pus add to the risks of the operation?" According to Bürkle's statistics mentioned before, out of 17 cases in which carcinoma of the cervix was associated with pyometra, 7 cases ended fatally. Presumably the cause of death was septic peritonitis. This is a very high rate of mortality, and it seems possible that it may be due to the fact that many German operators—the statistics are a *summary* of German operations—close the peritoneal cavity and then unite the vaginal mucous membrane with sutures. It seems to me that the safety of the operation of vaginal hysterectomy depends on leaving the opening in the vaginal roof freely open, using a plug of iodoform as a drain. Suffice it to say that all my three cases recovered without any complications, and in none did the temperature rise above 100°.

It would be interesting to know what is the result of these cases if left alone. Does the Fallopian tube become gradually distended and septic peritonitis ensue with rapidly fatal ending? or does septic peritonitis develop from infection conveyed directly through the uterine wall? I shall be glad to know the experience of any Fellows of this Society who have had the opportunity of seeing autopsies on such cases dying in hospital. I should also like to hear the opinion of Fellows as to whether this condition is confined to cases of cancer of the cervix occurring many years *after the menopause*, when the cervix is atrophied, as my cases might lead one to infer. Only a few weeks ago, in the out-patient department at St. Thomas's Hospital, I saw a patient sixty-eight years of age who complained of a purulent vaginal discharge for two and a half years, which for the last twelve months had been blood-stained and offensive. On examination I found the cervix ulcerated and infiltrated with cancer, and the body of the uterus as large as a tennis ball and distinctly elastic. She refused to come into the hospital, but I think there is little doubt that the elastic enlarged uterus was also a further case of pyometra. I shall be interested to follow the case up if possible.

Dr. Lewers said he was much interested in the subject of Dr. Tate's paper. He had had 67 radical operations for cancer of the uterus. Excluding 10 of these, which were cases of cancer of the body of the uterus, there remained 57 operations for cancer of the cervix. Among these he had met with two examples of pyometra, the larger of which was the specimen he had shown before the Society, and was the one to which Dr. Tate had referred. In that case he (Dr. Lewers) removed the whole uterus, not on account of the pyometra, but because the growth had spread so high that it seemed easier to get well beyond it by complete hysterectomy. As regards the symptoms in cases of cancer of the cervix complicated by pyometra, in some cases there was a moderate rise of temperature found to occur at night. This was so in his (Dr. Lewers') case above referred to. He agreed with Dr. Tate that the presence of this complication did not affect the progress of the operation, and thought, with him, that the reason was the free drainage afforded when the wound in Douglas's pouch was left open. In two of Dr. Tate's cases he noticed that vaginal hysterectomy was performed, although some thickening, probably due to extension of the disease, was felt in one broad ligament; in fact, the operation was undertaken as a palliative treatment. For his own part, he did not advise operation when the disease had extended beyond the limits of the uterus. It seemed to him that it was not worth the patient's while to undergo such an operation as vaginal hysterectomy merely as a palliative measure. He observed that Dr. Tate sent his patients out at the end of three weeks after vaginal hysterectomy. He himself kept these cases in bed three weeks, as he had known secondary hæmorrhage occur as late as the end of the third week. Both the examples of pyometra he (Dr. Lewers) had met with were in elderly women, in whom the menopause had occurred some years previously.

Dr. Lea had observed five instances of pyometra complicating cancer of the cervix. The patients had all passed the menopause some years previously. He had in four cases examined the pus bacteriologically by cultures on gelatine and agar, and found it to be always sterile. He did not consider that the presence of pyometra increased the risks of the operation. The internal os was the point of occlusion, and here a ring of dense tissue was found, the uterine cavity beyond being quite free from growth. In two cases uterine pain was felt almost from the onset of the symptoms, and hence it is probable that sometimes occlusion of the internal os may be an early event. Microscopically some cases showed considerable glandular activity in the uterus.

Dr. Amand Routh thought that the fact brought out so well by Dr. Tate, that cases of pyometra could exist without stenosis cervicis, was of great importance, and enabled us to explain

those cases of hydrometra and gushes of large quantities of clear, straw-coloured fluid, which were not uncommon after the menopause. Many of such cases had no obstruction of cervix, and no tubal swelling was present. With regard to Dr. Tate's two cases of vaginal hysterectomy where the surrounding tissues were already apparently involved, he said it was impossible to be sure that such indurations were malignant, and not inflammatory. Septic absorption, with parametric exudation, resulting from the state of the cervix, was often present. He instanced the case of a woman on whom he had performed vaginal hysterectomy at Charing Cross Hospital in 1891, where the uterus was very immobile with an excavated malignant cervix. After consultation it was decided to operate, and the woman lived six years without any recurrence, a definite recurrence only having appeared last July just above the vaginal vault.

THE OBSTRUCTION OF LABOUR BY OVARIAN TUMOURS IN THE PELVIS.

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(*Abstract.*)

This paper deals *only* with those cases where the ovarian tumour occupied the pelvis during labour. One hundred and eighty-three instances of this complication have been collected. These are arranged in nine tables, according to the treatment adopted. Two unpublished cases are detailed. A brief reference is then made to the various publications on this subject. It is pointed out that there still exists, as evidenced in the more recent publications, a divergence of opinion as to the most satisfactory treatment.

The results of the various methods are analysed. To avoid the erroneous deductions to which mere statistical enumerations are liable, account is taken, where the data permit, of the character of the tumour, of the duration of labour, &c., points which will be found noted in the tables.

Attention is directed to a few features of interest in the clinical histories of the cases. Practical observations are made on the various methods of treatment, based on a study of the cases and of the literature of the subject. Reposition should in all cases be first attempted; where it fails, a selection, according to circumstances, must be made from the following operative measures:—puncture, Cæsarean section, abdominal or vaginal ovariotomy. The indications for each of these methods are given.

The author concludes with a brief reference to the after-

treatment in those cases where the tumour has not been removed during labour.

THE presence of an enlarged ovary in the pelvis during labour forms so serious an obstruction that it must always give rise to the greatest anxiety on the part of the medical attendant. It is a condition in which early and active interference, in the interests of both mother and child, is imperatively called for; and it will be admitted that in so formidable a complication it is of the greatest importance that the nature and the time of this interference should be clearly determined and clearly defined. To quote the words of Dr. D. Davis:* "The rules for the management of such cases can never be made too explicit and circumstantial."

Hitherto the subject has not received the consideration in obstetric works which its importance merits. Its discussion has been left largely to occasional papers and to casual contributors. It is not surprising, then, that the general practitioner when confronted with a case of this character should be in doubt as to the appropriate treatment to adopt; or even at times, as will be seen from the cases I propose to review, be in doubt as to the nature of the condition with which he has unexpectedly been called to deal. The consequence has too often been an expectant policy, based on the hope that nature would of herself overcome the obstacle. But, as experience teaches us, nature can succeed in these cases only at a great risk, and if she fail, the delay has aggravated the danger, and allowed the most favourable time for treatment to pass. Here, as in all cases of obstructed labour, the results are the more favourable the earlier the necessary treatment is instituted. In not a few of the recorded instances the fatal issue is to be attributed, not to the measures adopted, but to the delay in adopting them.

It may be well at the outset to indicate the limits and scope of this paper. It deals only with *ovarian* tumours,

* 'Elements of Operative Midwifery,' p. 109.

situated in the pelvis and forming a mechanical impediment to the progress of labour. We are not here concerned with the influence or treatment in pregnancy, even where the tumour is found to occupy the pelvic cavity. The results of artificial premature labour require separate consideration, and are therefore not included. It is surprising in how few of the cases was the existence of any abnormality suspected during pregnancy. In the great majority the complication was not detected till vaginal examination during labour, and in consequence the necessary treatment had frequently to be adopted in unfavourable circumstances and with insufficient assistance. To this may be attributed a considerable share of the excessive mortality.

Before proceeding to review the results of the various methods of treatment which have been directed against this obstruction, I propose briefly to submit the clinical history of two cases, one of which came recently under my own observation, while the other occurred some years ago in the practice of Dr. Bruce, of Dingwall.

Case 1.—On the evening of August 25th, 1895, I was summoned to attend Mrs. W— in her fifth confinement. She was thirty years of age, strong and well built. Her previous labours were very tedious, and, with the exception of the last, instrumental. Her recoveries were good, save after the second child, when she had an inflammatory attack, lasting several days, during the second week of the puerperium. Towards the end of the present pregnancy she was much troubled with down-bearing pain and with irritability of the bladder. For the last three months of gestation she felt something protrude from the vulva on straining during urination. This increased till latterly it was the size of an egg, probably a cystocele, but no mention of it was made till after delivery.

Labour began on the afternoon of August 25th. When seen at 8 p.m. the os was the size of a shilling, thick, but soft and dilatable; pains weak, at intervals of ten

minutes; head presented; pelvis and vagina apparently normal. At 12.30 a.m., when next seen, the os was about the size of a florin, and much thinner; pains of moderate strength and frequency. At 4 a.m. it was found she had made considerable progress, the os being more than half dilated, and the uterine contractions much stronger. The posterior vaginal wall was now felt to be occupied by a flattened fleshy mass of about the size and thickness of a well-developed placenta The swelling was thickest at its centre; its lower border reached almost to the vulva, while above it tapered gradually to the promontory, where it seemed to end. It completely filled up the hollow of the sacrum. No tenderness was complained of on pressure. With each pain the tumour could be felt to become tense and more elastic. It seemed uniform, and gave the impression of being entirely cystic.

About 5 a.m. the membranes were ruptured, but the head did not descend, though the pains were frequent, strong and down-bearing, The swelling increased in size, and it was now seen that it would form a serious obstacle to the passage of the head, narrowing as it did the conjugate of the cavity by over two inches.

Finding it impossible to remove the obstruction, and uncertain, I confess, as to its nature, I sent for Professor Stephenson.

After careful examination he endeavoured to push the mass up, but without success. The patient, who had been partially under chloroform, was now deeply anæsthetised, when, with his whole hand closed in the vagina, Dr. Stephenson succeeded by steady pressure in raising the tumour above the brim. It passed up with a jerk towards the right iliac fossa. I then examined, found the pelvis clear, at once applied the forceps, and delivered with a few tractions a living male child considerably over the average size. The placenta was removed by expression. To our surprise, the tumour could not be felt in the abdomen. The woman made a most satisfactory recovery, interrupted only by an attack of pain

in the right inguinal region on the fifth day. This lasted only for a few hours, and did not in any way retard her recovery.

As I left town soon after her confinement she was not again examined till September 21st. For several days she had been affected with a dragging pain in the back, and occasional down-bearing—so troublesome as to interfere with her domestic duties. She complained also of an uncomfortable fulness in the abdomen. On examination the uterus was found well involuted but retroverted, the fundus lying in Douglas's pouch. The hypogastrium was occupied by a rounded uniform tumour almost the size of a fœtal head, and resembling in position and in consistence the uterus at about the third day of the puerperium. It was freely moveable and quite distinct from the uterus, which could readily be elevated into its normal position.

On September 24th Professor Stephenson saw Mrs. W— along with me. The tumour, it was found, passed readily into either iliac fossa, and could be pushed up under the ribs. By strong pressure it could be pushed downwards and backwards into the pelvic brim, giving the impression that further effort would force it into the position it occupied during labour.

At the end of six months the condition was practically unchanged, save that the tumour had lost its central position, and now lay in the right iliac fossa, while the uterine axis was normal.

The woman willingly consented to the removal of the tumour, and it was decided to operate on the completion of lactation. Examining her, however, on July 18th, 1896, a few days after weaning, I found to my disappointment that she was already pregnant about the eighth week. The operation was accordingly postponed till August 29th, when ovariotomy was performed by Dr. Scott Riddell. The recovery was excellent save for a rise of temperature on the fifth day, attended with sore throat, the pyrexia continuing for five days.

The tumour, which I now show to you, proved to be a

dermoid of the right ovary. It weighed 1 lb. 12 oz., and consisted of two parts—a cystic part which formed the lower and anterior third, and a solid part forming the upper and posterior two thirds, and containing fatty matter, hair, and bone. It had "the longest pedicle I have seen in any case of ovarian tumour, and was quite free from adhesions."

On January 15th, 1897, Mrs. W— was delivered of a small, living, female child. The labour, a contrast to her previous experiences, was so rapid that the child was born quite unexpectedly half an hour before my arrival. The child was smaller than on former occasions, and weighed only 6¾ lbs. She made an uneventful recovery.

Case 2.—M. McH—, single, aged 29, 1-para. Labour began on March 6th, 1879; seen early in labour; head presenting; a fulness observed in posterior vaginal wall which was thought to be due to a loaded rectum. A strong purge was ordered, but though this acted freely twice, the fulness still remained. A more careful examination now revealed the presence of a tumour in the posterior vaginal wall, occupying the hollow of the sacrum. Repeated efforts were made, *per vaginam*, to dislodge the tumour, both without and with an anæsthetic. As these were unsuccessful, an examination was made *per rectum*, when the tumour unexpectedly slipped up above the pelvic brim. Continuous downward pressure was then made on the uterus to prevent the tumour from again descending. Labour now progressed satisfactorily, but had to be completed by the forceps. The child was over the average size, and living. After labour the tumour was readily felt in the abdomen, and could be pushed up till it disappeared behind the ribs on the right side. A medical friend who saw the patient next day had difficulty in finding the tumour, only detecting it on searching the right hypochrondrium, where it lay just under the ribs. Convalescence without any bad symptom. Subsequent history unknown.

To these hitherto unrecorded instances I venture to add a short abstract of the most recently published case, which was communicated by Ostermayer to the 'Centralblatt fur Gynäkologie' for May 29th, 1897. The case possesses several features of great interest, and of value in their bearing on treatment, which must be my excuse for troubling the Society with the following brief description. Ostermayer, called in consultation to a woman in labour over thirty hours with her seventh child, found a non-fluctuating doughy swelling—harder at parts—filling up the hollow of the sacrum and preventing the head from entering the brim; difficult to decide as to cystic or solid character of tumour; reposition failed under narcosis; the great tension of the lower uterine segment demanded immediate action; resolved to perform craniotomy in interests of mother, in preference to risking either trial puncture or incision of tumour on account of great danger of infection of peritoneum through the exudation of cyst contents; after perforation unable to extract; determined to try incision before resorting to Cæsarean section; incision 6 cm. in extent into vaginal wall without result; enlargement of incision with no success. Ostermayer now inserted his finger into the opening and found obstructing it a ball of hair the size of a small apple; its removal followed by the escape of about one litre of thick grey matter; three more balls of hair removed; tamponaded sac with iodoform gauze; prevented from suturing by descent of head; child extracted with cranioclast; tamponaded uterus and vagina; in two days all gauze removed, that in cyst cavity giving putrid stench; proposal to extirpate sac rejected by patient; sac accordingly secured to vaginal wall and treated by drainage and irrigation; six weeks after there was still a secretion of thick fœtid liquid from the sac, which is now much contracted; ambulatory treatment continued till the time of writing.

The gravity and importance of the complication, which these cases illustrate, have led not a few obstetricians to

direct attention to the condition, so that there exists a not inconsiderable amount of literature on the subject. While Park in 1811 recorded in the 'Medico-Chirurgical Transactions' a series of six cases that came under his own observation, the merit of making the first important collection of published cases belongs to Merriman. In 1819 he submitted to the Medical and Chirurgical Society, in his well-known paper, an analysis of eighteen cases collected from various sources. Reference is next found to the subject in Puchelt's admirable work, 'Commentatio de tumoribus in pelvi partum impedientibus,' published in 1840, in which he detailed the clinical histories of thirty-two instances of obstruction due to ovarian tumours. On similar lines was the paper by Lever in the 'Guy's Hospital Reports' for 1842–3, in which he added to Merriman's series six further cases of ovarian obstruction. We find the subject next very exhaustively dealt with by Prof. Litzmann, of Kiel, in a series of able articles in the 'Deutsche Klinik' for 1852. To Puchelt's cases he was able to add twenty-four new observations. In 1854 and 1861 appeared the valuable dissertations of Hirsch and Jetter, which were followed in 1867 by the classical paper read by Dr. Playfair before this Society, in which a detailed analysis was given of previously published cases—fifty-seven in number. This paper has formed the basis on which most subsquent writers have founded their descriptions and their treatment. It contains, however, several inaccuracies both of fact and of inference, as will subsequently be pointed out.

Since 1867 no attempt has been made in this country to deal with this important form of obstructed labour. In Continental medical literature, however, there have appeared several valuable contributions, notably the excellent dissertation of Heiberg, of Copenhagen, published in 1881, which is without doubt the most careful and accurate compilation hitherto published. In the 'Archiv f. Gynäkologie' for 1882 there is published a critical review by Lomer, who added four hitherto unrecorded cases.

More recently Staüde,* Rubeska,† and Hohl‡ have discussed this subject, on the great importance of which all are agreed.

Notwithstanding these various attempts to establish on a satisfactory basis the treatment of labour obstructed by ovarian tumours, there still exists a divergence of opinion among obstetric authorities—evident even in the more recent contributions—which affords sufficient justification for redirecting attention to the subject. In the thirty years that have elapsed since Dr. Playfair read his paper, so many cases have been recorded that a review of our position in the light of further experience seems desirable.

The cases which I now propose to submit to analysis include Playfair's series, which, however, has been corrected in one or two particulars. Case 57, for example, must have been included through an oversight, as the tumour was a malignant growth from the sacrum, and *not* ovarian. Again, Case 15 is the same as that reported by Ashwell (Playfair No. 53). For these two cases I have substituted two others (Table I, 21 and 25), where the labours were in the same patients as No. 5 and No. 7 of Playfair's collection, which thus remains at 57.

To these 57 I have been able to add 126, making a total of 183 cases of labour obstructed by an ovarian tumour. To borrow the words of Professor Stadfelt, in his elaborate paper on labour obstructed by pelvic tumours, "It has been an onerous task to compile the cases adduced in this paper, and I am far from flattering myself I have succeeded in gathering all the published cases."

In the accompanying tables the cases have been arranged according to the treatment adopted. Playfair's cases, similarly classified, are kept separate for purposes of comparison.

In analysing the results I have endeavoured to eliminate as far as possible the errors to which statistical de-

* 'Zeitschr. f. Geburt. u. Gynäk.,' 1895.

† 'Monatschr. f. Geburt. u. Gynäk.,' 1895.

‡ 'Archiv f. Gynäk.,' Band li.

ductions are always liable, by determining, with as much accuracy as the data permit, the pathological character of the tumour, the duration of labour, and its effects on the physical condition of the woman antecedent to treatment. A statistical inquiry which ignores these factors must be largely deprived of its value.

The mere comparison of deaths and recoveries following any individual treatment tends to lead to erroneous conclusions. In many of the fatal cases the untoward result is to be ascribed, not to the operative measures, but to the preceding exhaustion from delay, which, as their history shows, might in many have been avoided.

Further, in estimating the value of any method the character of the convalescence must not be overlooked. In Case 20, Table III, for example, the record concludes: "but after a protracted convalescence, seemed to recover in some measure from the effects of her confinement." Again, in Case 42, Table III, we find that the patient "had a tedious and difficult recovery, if indeed it could be termed a recovery." After a miserable existence she was at length released "from her sufferings about eighteen months after her delivery." Results such as these—and they are not uncommon,—though classed as recoveries, can scarcely be adduced in favour of the treatment which was employed.

A few points of general interest may with advantage be here noted. The surprising infrequency with which the existence of any abnormality was suspected during pregnancy, has already been pointed out. In 33 only—or in 18 per cent.—was ovarian disease discovered previous to the actual onset of labour, and in few of them was the discovery due to symptoms referable to the disease. The cause obviously lies in the fact that its situation in the pelvis implies a tumour so small as to occasion no great inconvenience; but be that as it may, from the point of view of treatment it is an important consideration. It follows that radical measures during pregnancy were possible in only a small percentage of cases, and thus

that two of the three methods recommended by Sir John Williams* for preventing injury to the ovarian growth, namely, removal of the tumour during pregnancy and the anticipation of labour by the Cæsarean section, are comparatively seldom applicable.

Another interesting point bears on the character of the tumour. In 70 cases the evidence is insufficient to form a reliable opinion. In 113 the nature of the tumour had been ascertained with comparative certainty. In 49 the enlargement was a simple or multilocular cyst, while it was a dermoid in 46, in one of which the other ovary, enlarged and cystic, also occupied the pelvis; in 9 the tumour was malignant in character; in 5 a fibroma; in 2 colloid; in 1 fibro-cystic; and in 1 a cystic adenoma. In 12 cases the abdominal ovary also was found affected.

It is generally believed that the dangers are greater when the obstructing tumour is a dermoid, and this belief is fully borne out by experience. In the 49 cases where the ovary was cystic, 10 deaths occurred, if we deduct 2 in which death was due to eclampsia. In the 46 cases of dermoid, 18 deaths are found—a mortality almost double.

The total number of maternal deaths is 56, or 30·5 per cent. Of the children whose fates are noted, over one half perished. The causes of this high maternal mortality are various, but almost all are referable to the injuries sustained by the tumour during the processes of labour.

The severity and result of the subsequent inflammation seem to depend more on the character of the tumour contents than on the degree of pressure and contusion to which it has been subjected. As may be surmised, the most frequent immediate cause of death is peritonitis, due at times to rupture of the cyst, at times to infection and suppuration of the cyst contents, which, as recent investigations show, are peculiarly liable to follow slight injuries or even to originate without apparent cause in the case of dermoid tumours.

Although the maternal death-rate in all recorded cases

* "Cavendish Lecture," 1897.

is nearly 31 per cent., it would be unfair to take this as representing accurately the risk attending this complication with the improved methods and knowledge of to-day. An interesting comparison might be made between our collection and Playfair's, but the contrast will be still more striking if we compare the mortality of the last twenty years with the mortality in all earlier cases. Since 1876 there have been recorded 48 instances of this complication : 6 of the mothers, or only 12·5 per cent., and 17 children were lost—the fate of 2 children being unknown.

In the 135 earlier cases the maternal death-rate is 37 per cent., while the fœtal mortality of 60·5 per cent. compares unfavourably with 34·7 per cent. in the later group. Though probably a mere coincidence, it may be noticed that the decrease in the maternal and fœtal death-rate is almost exactly the same, 24·5 per cent. This improvement might naturally be attributed to antiseptic methods ; but that antiseptics are not the sole or even the most important cause may reasonably be concluded from the great increase in the proportion of children saved. A study of the tables shows two other contributing factors, namely, an earlier resort to treatment and the greater frequency with which reposition has been attempted and effected. In 34 of the later cases in which the duration of labour is more or less accurately ascertainable, the average duration is almost exactly twenty-four hours. Of the 135 earlier cases it is possible fairly to approximate the duration in 70 only, a few being assumed as of forty-eight hours' duration, where the labour is described as "very protracted." In these 70 the average duration is almost forty hours. Thus, in later years there is evidence of an abandonment, with beneficial results, of the old policy of giving nature a "full and fair trial," before attempting any remedial measures.

Rupture of the cyst occurred during labour in 15 cases, death resulting in 9. In 5 the cyst ruptured spontaneously, in almost all after a protracted labour ; 2 of the mothers died. In 3 rupture took place during attempts at

reposition, which was successful in 2, but gave rise to fatal peritonitis; in the third the mother made an excellent recovery, labour lasting only seven hours. In 1 case rupture occurred during vaginal examination, and proved fatal; in 1 during version; in 3 during traction with the forceps, all proving fatal; and in 2 during craniotomy, one mother recovering.

In 5 cases of great interest there occurred what Playfair terms a "natural ovariotomy," the tumour prolapsing through a rent in the recto-vaginal septum; in 2 of them the tumour passed *per rectum*, in one soon after birth, in the other during labour, the former proving fatal; in 3 the tumour escaped by the vulva, in one suddenly slipping out during strong efforts with the forceps, the mother making a slow recovery, in one the tumour was expelled with the placenta, and in the third it passed a few hours after birth, both the latter proving fatal. The interest of these cases lies in the illustration they afford of the ease with which, in certain circumstances, vaginal ovariotomy may be performed during labour.

Rupture of the uterus was the cause of death in 2 cases (Ward and Lee); while in 1 of Nathan's cases the lower uterine segment ruptured, the mother recovering after a protracted convalescence.

Three women died undelivered (Schamberg, Basc, Lomer). In the case recorded by Lomer version was performed, but in the efforts at extraction the trunk was torn from the head, which was not removed before death supervened; the woman had been over eighty hours in labour.

Two cases—not included in the tables—are recorded, one by Gooch and one by Denis, in which death occurred before delivery, but in both it is doubtful if the diseased ovary was in the pelvis.

Of the 183 cases with which this analysis deals, the termination of labour was left to the natural powers in 35, with a fatal result to the mother in 12; while of the children 16 are known to have been lost, the fate of 8

being doubtful. To this group are referable 6 of the cases of cyst rupture, 4 of the mothers recovering. In Fischel's case (Table I, Case 3) rupture took place into the peritoneal cavity during attempts at reposition; the labour lasted only seven hours, and the puerperium was afebrile. One death—Case 10—occurred with delivery uncompleted, while two were due to rupture of the uterus. In Hohl's case, owing to inflammatory symptoms, ovariotomy was successfully performed on the seventh day of the puerperium. In Case 12, where the woman is stated to have recovered, death occurred five and a half months after from suppuration of the cyst and consequent pyæmia.

Of the mothers who recovered, a note of the convalescence is found in 9; of these, 4 are expressly stated to have had a protracted and unsatisfactory recovery.

Reposition of the tumour was effected in no fewer than 41 instances, and this number could have been greatly augmented had the attempt been more frequently made. In at least 60 of the cases the possibility of dislodging the obstruction seems never to have been entertained. It is significant of the improved knowledge and management of cases of this kind that in 35 instances in our collection—or 28 per cent.—the tumour was pushed above the brim, while in Playfair's series we find reposition in only 10·5 per cent.

In 2 cases reduction was effected *per rectum*, in one by the aid of Barnes' bags in the knee-elbow position. In our own case and in Hardy's the tumour resisted all efforts at reduction till the whole hand was inserted into the vagina.

It will be seen that 6 deaths followed reposition, while only 7 of the children are stated to have been stillborn; in 6 cases the fate of the children is not recorded.

Of the mothers who recovered, the convalescence was in almost all cases normal. Of the 6 deaths, 1 resulted from eclampsia, 1 from puerperal fever during an epidemic, and in 1 the tumour was malignant, causing premature labour. Neglecting these three results as accidental, we

find only 3 deaths attributable to treatment—a mortality of 8 per cent. In 1 the tumour slipped unexpectedly above the brim during attempts to turn after a protracted labour; in the remaining 2 death was due to rupture of the cyst into the abdominal cavity. It is expressly stated in these cases that many fruitless attempts were made, in one extending over many hours.

In 22 of the 41 the labour was completed by the natural powers; in 7 reposition was followed by the forceps, all the mothers recovering, in 2 by turning; in the one which proved fatal, attempts at turning preceded reduction, which occurred accidentally.

In 5 cases the tumour was afterwards successfully removed; in 1 on the fourth day of the puerperium; in 1 three months after; in 2 a year after, in one of which the woman was in the fourth month of pregnancy; and in 1 three years after.

Puncture or incision of the tumour was resorted to 43 times, resulting in the death of 8 mothers and of 24 children. In 3 cases the puncture was made from the rectum, in the others from the vagina. Incision was substituted for puncture on 3 occasions, 2 of the mothers recovering. Discounting one death which was due to eclampsia, we get a maternal mortality following puncture of 18·6 per cent. If we inquire into the character of the convalescence, we find that in no fewer than 15 of the 18 cases in which it is noted it was unsatisfactory, in some cases the febrile symptoms extending over several weeks. To not a few of them, indeed, the description may be applied with which Wheelhouse closes the admirable record of his case: "long in a critical condition, but ultimately seemed to recover in some measure from the effects of her confinement." In Hohl's case the dangers of the puerperium were avoided through the removal of the tumour by abdominal section two hours after delivery.

It is true these figures embrace not only those cases where puncture formed the sole treatment, but also those

where it was followed by embryotomy, forceps, or version. Clearly, however, these cannot be excluded, as Playfair excludes them, in appraising the value of puncture, for we find that in most of them nature was given "a fair and full trial," and not till she failed was a resort made to further measures. In Case 43, for example, embryotomy was not performed till fifty hours after the beginning of labour, and over sixteen hours after puncture, the puncture having only partially removed the obstruction.

In 11 cases puncture was followed by the forceps, 10 mothers recovering; 8 times by craniotomy, 6 mothers recovering; in 3 the forceps failing, craniotomy was resorted to, 2 mothers recovering; in 1 case which proved fatal puncture was followed by turning.

Table IV shows that version formed the sole treatment in 17 cases, with a maternal mortality of 6; while of the children 10 were stillborn, the fate of 3 being unknown.

In 4 of the 5 cases in which it is noted, the convalescence was febrile and protracted, necessitating in one a few months after the removal of the tumour, while in another death took place at the end of a year from enlargement and suppuration of the cyst. In the cases where version was combined with other measures, the result was in no way more satisfactory: once it followed puncture with a fatal issue to both mother and child; twice it was employed after reposition, both children and one mother being lost.

In only 14 cases was the forceps alone relied on—a proof of the inefficacy of ordinary obstetric operations in this complication. The results were even more disastrous than followed version; 8 of the mothers died, while only 4 of the children are known to have survived. Of the mothers who survived, the convalescence, where noted, is found to have been unsatisfactory; in 2 necessitating the removal of the tumour after the puerperium. In 2 cases the cyst ruptured during traction, both mothers succumbing; in 2 others, as already mentioned, the tumour escaped through a rent in the posterior vaginal wall.

The forceps were employed 22 times in combination with other measures, 7 times after reposition, 15 times after puncture, in 3 of which they failed, delivery being completed by craniotomy.

In 18 cases labour was terminated by embryotomy alone : 10 mothers recovered, in 7 of whom the convalescence is noted ; in 4 it is pronounced favourable, in 3 unsatisfactory. Further, embryotomy was employed once after reposition as the child was known to be dead, and 11 times after puncture, in 3 proving fatal.

On 10 occasions delivery was effected by Cæsarean section ; 2 mothers recovered and 6 children were saved. In all, with two exceptions, it will be seen that the operation was not undertaken till the woman was exhausted by a protracted labour, which in 4 of the cases lasted at least three days.

Abdominal ovariotomy *intra-partum* was performed on 2 occasions. Both labours were, on full dilatation of the os, at once completed by the forceps. The mothers made excellent recoveries.

In 3 cases the obstructing ovary was removed *per vaginam* during labour, with a successful result to both mothers and children. In Rubeska's case, though the puerperium was normal till the eighteenth day, an operation was subsequently necessary owing to febrile symptoms with refilling of the tumour. This was successfully accomplished.

From a perusal of the literature of this subject, and a careful study of the clinical histories of published cases, I venture to make the following observations and practical suggestions.

The diagnosis of this complication of labour presents, as a rule, little difficulty. Doubt may occasionally arise as to the actual character of the tumour, but the determination of this, in such cases, is of relatively little practical moment.

The important point is to be aware of the *possibility* of an enlarged ovary occupying the pelvis. In the history

of several of the cases we find a good illustration of the truth of the dictum that "to diagnose you must suspect."

An elastic tumour in Douglas's pouch, more particularly if fluctuating, is in all probability ovarian. As an aid to diagnosis rectal examination should never be omitted. From neglect of it the obstruction was in more than one instance regarded as due to a defective pelvis. In a few cases it was concluded that the tumour was an extra-uterine pregnancy. Jetter recommends simultaneous rectal and vaginal examination with a view to ascertain the character and consistence of the tumour.

Diagnosis of the condition should at once be followed by an attempt at reposition. This should not be delayed till the membranes are ruptured, as is usually recommended. It is true the diminution in the uterine bulk from evacuation of the liquor amnii may favour the attempt and be necessary to success in some cases; but the elevation of the tumour should be effected as early as possible, if for no other reason because it facilitates dilatation, which the presence of an obstruction in the pelvis undoubtedly retards. In cases recorded by Granville and Sir John Williams the tumour was pushed up towards the end of pregnancy, and remained in the abdomen during labour. The danger of delaying till the membranes are ruptured is well seen in the case related by Lahs; more or less active pains were present for eight days, the patient was exhausted, but when seen by Lahs the pains were suspended and the lower uterine segment showed signs of rupture, though the membranes were still intact. A further illustration is found in Lomer's case (Table IV, Case 12), where the os was only the size of a four-shilling piece on the fourth day of labour; the membranes were still unruptured, and the uterus was found under chloroform to be almost as thin as paper.

The attempt to dislodge the tumour may be made without an anæsthetic, but if it fail it should be repeated under full anæsthesia, the advantage of which is sufficiently illustrated in the case that came under my own observation.

The whole hand may be introduced into the vagina, as in Table II, Cases 31 and 33, and a steady continuous pressure exerted. Cases which resisted the first attempts at reposition have yielded to taxis extended over a considerable time. That this procedure, urged especially by American authors, is not free from danger will be seen from Table I, Case 3, and also from Table II, Cases 13 and 30, where, though the attempts at reposition succeeded, the tumour ruptured into the peritoneal cavity with fatal result. In these cases it is expressly stated that repeated efforts were made before reduction was effected, and it may be concluded very considerable force was employed. A further illustration of this danger is to be found in the case recorded by Dr. W. Duncan in vol. xxxvi of this Society's 'Transactions,' where in the early months of pregnancy a pelvic ovarian cyst ruptured into the peritoneal cavity during an ordinary vaginal examination. This unfortunate result is not to be wondered at when it is remembered that spontaneous rupture may take place. The importance, as Dr. Duncan points out, of great care and gentleness in palpating a pelvic cyst should never be forgotten. The opinion expressed by Fischel that forcible reposition, even though rupture should be induced, is safer than puncture from the vagina, cannot be entertained. Where the attempt to effect reduction *per vaginam* fails, an effort should be made from the rectum. Not a few of the cases illustrate the value of this method, and more particularly our second case, where the tumour, irreducible *per vaginam*, unexpectedly slipped up during rectal examination. The knee-elbow or semi-prone position—favouring reduction—may be found useful in obstinate cases.

Where all attempts at reposition fail, the case assumes a much more serious aspect. The prognosis is then influenced mainly by the character and consistence of the tumour, and—little less important—by the duration of labour and its effect on the woman and the uterus. These same factors determine our treatment. It will not now be questioned that active intervention is in all cases impera-

tive. Nothing is to be gained, and much risk may be incurred by an expectant policy. After a careful consideration of all the circumstances, the method best suited to meet the existing conditions must be selected and *at once* put in operation.

Eight methods exist, as will be seen from the annexed tables, whereby either singly or in combination labour may now be terminated, namely, the unaided natural powers, puncture or incision of the tumour, version, forceps, craniotomy, Cæsarean section, laparotomy for the removal of the obstruction, and vaginal ovariotomy.

A priori considerations combine with the statistical evidence to show the dangers of leaving the labour to the unaided natural powers. The older writers on midwifery, however, claimed that nature should first have a full trial, where the obstruction was of moderate size. Their attitude and teaching, which is undoubtedly accountable for much of the earlier mortality, may be shortly stated in the words of Dr. Davis :* "In cases of partial or a very moderate confinement of the parturient passage from this cause it will be prudent to give nature the fullest opportunity that may be allowed to her compatibly with the probable safety of the lives and living structures interested in the struggle to effect her own delivery by her own unassisted exertions."

The risks involved in leaving the case to nature, apart from the danger of protracted labour, are contusion of the tumour with subsequent inflammation and peritonitis, rupture of the cyst into the peritoneal cavity, and rupture of the uterus. Recorded cases furnish illustrations of all these complications. The danger, therefore, is sufficiently grave to warrant the conclusion, that even in the case of tumours so small as to present an apparently insignificant obstacle to delivery, some measure of artificial aid is imperatively required.

Diminution of its bulk by puncture has been the method most frequently adopted in dealing with an irreducible tumour. The simplicity of the procedure has

* L. c., p. 109.

done much to recommend it as the line of least resistance. Playfair, misled by his statistics, was induced, as already indicated, to give it priority even to reposition.

Where the tumour is entirely cystic, puncture *per vaginam* with a good-sized trocar is, on the whole, the safest method of treatment, although it is not so absolutely free from danger as Playfair's statement indicates. There is evidence more recently of a growing distrust of puncture. The opinion of Fischel, that it is more dangerous even than rupture into the peritoneal cavity, has already been alluded to. One of the dangers attaching to the operation is the difficulty of making certain that the tumour is purely cystic, and, where partially solid, in inducing the belief that the diminution effected in its bulk will allow the labour to be completed, either naturally or artificially, without danger. There is, too, the risk of infection. Gottschalk,* in an able paper on the influence of childbed on ovarian cysts, lays great emphasis on the part played by puncture in the subsequent suppuration and decomposition of the cyst contents. Among others, Hirst's case, where laparotomy was necessary on the seventeenth day, illustrates this danger. Further, the possibility of peritoneal infection must not be forgotten. It was this possibility that led Hohl, when puncture showed the cyst to be a dermoid, to perform ovariotomy two hours after delivery—an operation which the event justified, as part of the cyst contents, it was found, had escaped into the peritoneal cavity. We cannot agree with Lomer† that this danger is imaginary. The existence of adhesions in tumours that are irreducible he holds to be a complete protection against this accident, but the present collection supplies several instances where irreducible tumours were found on post- or ante-mortem section to be entirely free from pelvic adhesions. Experience supports rather the view set forth by Hohl in the

* "Über den Einfluss des Wochenbetts auf cystische Eierstockgeschwülste," 'Berlin. med. Gesellsch.,' 1897.

† 'Deutsche med. Wochenschr.,' 1890.

most recent contribution to this subject, that a puncture carried out under all antiseptic precautions still conceals within it several dangers. He concludes, however, that in doubtful cases puncture should be the rule, if only to arrive at a sure diagnosis. Where the cyst contents are found to be infective, and more particularly in dermoid cysts, puncture should, it is now generally admitted, be followed by ovariotomy. Even in those cases where the tumour seems entirely solid, it is usually urged that an experimental puncture should be made before resorting to more formidable measures. Instances are on record where the swelling, apparently a solid mass, proved on puncture to be a tense cyst.

Fritsch* prefers incision to puncture of the cyst, believing it to be more free from danger. He makes an incision one and a half inches long in the mesial line of the vagina, beginning at the posterior lip of the os uteri. The cyst wall is at once secured by a suture to the vagina. The incision is then enlarged, and the edges of the cyst united with the edges of the vaginal wound. This was the method adopted by Ostermayer, who, however, was unable to complete the suture before delivery owing to the descent of the head. Whether the danger of infection is lessened by this plan, Hohl regards as very questionable.

To sum up, then, puncture supplies in many cases the form of treatment relatively best. It should be adopted where reposition has failed, in all purely cystic tumours, in which it sometimes effects a permanent cure. Even tumours that are partially solid it is permissible to puncture where there would be danger in delaying till further, perhaps unskilled, assistance could arrive. Puncture may in these circumstances form the readiest and safest means of completing delivery, at the same time furnishing indications for future treatment. Puncture is also useful for diagnostic purposes, or as a preliminary to further measures; its dangers, however, must never be lost sight of.

* 'Klinik d. Geburtsh. Operat.'

In all cases where the pelvic diameters are encroached on by an ovarian tumour, version, forceps, and craniotomy are contra-indicated as the sole means of treatment. The two latter may legitimately follow reposition, or ovariotomy, or puncture, which has completely removed the obstruction; where, however, puncture has effected only partial diminution, both forceps and craniotomy should, if possible, be avoided. Version is in all circumstances contra-indicated.

The claims of Cæsarean section as a method of treatment in this complication are now undisputed. The fallacy of statistics is well illustrated in our table, which gives an erroneous conception not only of the present dangers of the operation, but also of the relative frequency with which it ought to be undertaken. We find in the history of the cases that, though performed only ten times, the advisability or necessity of it was frequently entertained, but from its terrible mortality the operation was rejected, and other measures, in reality more dangerous, were preferred on account of their more easy performance.

Improved knowledge and technique, I need not remind this Society, have in large measure removed the dangers of the operation, and of this Staude's case furnishes a good illustration, for a successful result followed, though the operation was not performed till the labour had dragged on for nearly two days after full dilatation. In Mayo Robson's case, again, mother and child were saved under circumstances by no means favourable. Labour had not begun, but the woman was extremely ill, with a temperature of 103°. The ovarian cyst was full of pus, while behind the uterus, bounded above by the intestines, was a large septic abscess. In both these cases it was found necessary to remove the uterus and appendages.

Within recent years the field of the operation has become narrowed from the introduction of two comparatively new methods—*intra-partum* ovariotomy by the abdomen or by the vagina. Nevertheless, it must still

be regarded as a measure calculated in many cases to give the most favourable results. Hirst even goes the length of expressing the conviction that Cæsarean section followed by the removal of the tumour is preferable to puncture, on the ground that "by this plan many dangers in the puerperium are escaped." I may here refer also to the conclusion at which Dr. Griffith arrived, in discussing the treatment adopted in his case, that "Cæsarean section would have given the patient the best chance of recovery, and that it would be the best plan to adopt under similar circumstances, whatever the nature of the obstructing tumour."

The operation should be performed as early in labour as possible, or, as Sir John Williams recommends,* should anticipate the onset of labour where the tumour is detected during pregnancy. This is the practical lesson which our cases teach.

Briefly, the indications for the Cæsarean section are, an irreducible tumour which puncture has failed to completely diminish, which does not meet the conditions for vaginal ovariotomy, and which on abdominal section is found to be extensively adherent in the pelvis.

Removal of the pelvic tumour by abdominal section *intra-partum* has been recommended by various authors, but so far it has remained a purely theoretical operation. No instance of it has been put on record. *A priori*, however, it has much to commend it, and demands consideration.

These remarks were written before the publication of Sir John Williams' Cavendish Lecture of this year, in which two instances are recorded, the details of which he very kindly communicated to me. In one the abdomen was opened in the belief that the case was one of extra-uterine fœtation, but the child was found *in utero*, and a cyst occupying the pelvis. This could not be drawn up before it was tapped *per vaginam*, and then the operation was successfully completed. Labour pains recurred directly after the operation, and the woman was delivered by the

* L. c.

forceps of a living full-term child about twenty-two hours after. In the second case the tumour occupied the right side of the pelvic inlet, pushing the head to the left iliac fossa. It was thought best to operate as soon as labour began, and this was done. The mother, as in the former case, made a good recovery, but the child was born dead.

The utility and safety of this method are thus demonstrated. The cases, however, to which the operation is applicable, are seen on reflection to be limited. In the majority, though not by any means in all, of the cases where reposition has been found impossible, pelvic adhesions exist which render the complete removal of the tumour in the presence of the full-term uterus a measure of the greatest difficulty.

Where the tumour is found to be extensively adherent, the attempt should be abandoned, and the Cæsarean section substituted. The extirpation of the tumour may now be more readily effected, and if possible should be performed.

Where removal of the tumour has been successful without opening the uterus, delivery should be completed by the forceps so soon as the os is fully dilated, in order to prevent injury to the abdominal wound. Hohl, it must be mentioned, pronounces strongly against this operation, not so much on the ground of the alleged danger of asphyxia to the child, as from the risk of hæmorrhage from the strain to which the pedicle is subjected during the subsequent course of labour.

The special indication of this operation is a tumour which on abdominal section can be readily elevated from the pelvis and completely removed. In these circumstances it ought to be preferred to Cæsarean section.

Extirpation of the tumour *per vaginam*, of which we find two instances recently recorded, is a procedure still on its trial. Frequent reference to it is found even in the earliest writers on this subject, but almost all conclude in deprecating it as a form of treatment neither very practi-

cable nor safe. So early as Merriman the possibility of the operation was discussed. He writes, "on the whole, therefore, I am disposed to believe that where the tumour in the vagina occupies a large space, it would be a more warrantable practice to remove it by excision, if it consisted of a solid substance . . . . . rather than expose the child to certain death and the mother to great hazard by employing the perforator."* Davis, again, in his 'Operative Midwifery,' while admitting the operation as practicable, sees no sufficient reason for giving it preference to abdominal ovariotomy. Ramsbotham concludes that "the removal of the diseased mass" (*per vaginam*) "would be both very difficult and hazardous on many accounts, and horrible as the alternative is, I should in my own practice rather destroy the child, than subject the mother to such a formidable operation."†

Though thus frequently referred to in the earlier literature of the subject, we find no instance of its actual performance till 1895, notwithstanding that nature had herself more than once demonstrated the ease and safety with which it might be accomplished. The first published case is that of Rubeska, in which, however, owing to the impossibility of reaching the upper limits of the tumour, a small abdominal incision was made. By this means the upper attachments of the ovary were freed. Staude, in commenting on his case, and in illustration of the ease with which the extirpation can be carried out, mentions that he performed the operation with the sole assistance of a pupil midwife. Puncture and incision were first tried, but failed to sufficiently reduce the tumour, and the idea of total extirpation seems to have occurred to him from the protrusion of the cyst wall, thus verifying the statement of Lomer that "from the incision of the posterior vaginal wall to the depression of the cyst and ligature of the pedicle, there appears to be but a step."‡

* 'Med.-Chirurg. Trans.,' vol. iii.

† 'Obstetric Medicine,' p. 236.

‡ 'Archiv f. Gynäk.,' Bd. xix.

In his admirable paper Staude carefully defines the cases for which the operation is suited. Briefly, the conditions he lays down are, a tumour which lies wholly and deep in the pelvis, is moveable, pedunculated, with no or but slight adhesions, and whose upper limit is accessible from the vagina. Rubeska's case illustrates the importance of these conditions.

Dr. Dakin recommends this operation in preference to puncture. In his 'Handbook of Midwifery,' just issued, he says, "If the tumour is immovable, the best thing is to do vaginal ovariotomy; puncture is recommended by some, but it has many dangers."

It will naturally suggest itself that where the antecedent conditions for vaginal extirpation are present, reposition, which by universal agreement is to be preferred to all operative measures, should almost always be possible.

Vaginal ovariotomy is strongly condemned by Hohl, who regards it as a difficult and dangerous procedure, and in no circumstances as a justifiable substitute for Cæsarean section. With this view I am not disposed to agree. The operation has its difficulties and its dangers, but that in certain circumstances it affords the readiest and safest means of terminating labour must, I think, with Staude's case before us, be admitted.

The operation requires less assistance and technical skill than Cæsarean section—a no small advantage when it is considered that treatment has occasionally to be carried out without the aid of skilled assistance. The main objections to it are the impossibility of securing and maintaining asepsis, and, as pointed out by Hohl, the increased vascularity and liability to laceration of the vaginal tissues.

Sufficient practical experience is still wanting to establish its position. Personally, I look forward with interest to hearing the opinions of members as to the relative value of this operation, of Cæsarean section, and of abdominal ovariotomy as methods of treatment in this complication.

Consideration of our subject would be incomplete were we to omit reference to the subsequent treatment, where the removal of the tumour has not been effected during labour. On this question opinions are still divided. Its final settlement can be determined only by fuller experience.

Of the dangers to which the woman is exposed in the puerperium from the complication of labour with an ovarian tumour there is sufficient evidence in the high mortality, which, as already pointed out, is largely attributable to the injuries which the tumour has received. Even reposition early in labour does not entirely remove the risk. During the third stage of labour and during the puerperium there is also an increased liability to torsion of the pedicle of the tumour, dependent, as pointed out by both Löhlein* and Gottschalk,† on the sudden diminution of the intra-abdominal pressure and on the great laxity of the abdominal wall. Further illustrations of the dangers during the puerperal period are found in the history of many of the cases, for example of Rubeska's, where, though reposition was readily accomplished and the puerperium was normal, the tumour ruptured two months after, causing a severe attack of peritonitis, which rendered the subsequent removal difficult, owing to the formation of adhesions. Again, the onset of serious symptoms led in not a few cases to the necessity for ovariotomy in the puerperium, which had then to be performed under unfavourable circumstances. In others persistent ill-health required the removal of the diseased ovary at a later period.

In view of these facts some authorities recommend ovariotomy in every case where the tumour has been exposed to pressure for several hours. Others restrict the operation to those cases where puncture reveals the certainty of infection. Evidence is still wanting, however, not only as to the cases in which ovariotomy is demanded,

* 'Gynäkologische Tagesfragen,' H. 4.

† L. c.

but also as to the time at which it should be performed. Hohl is in favour of immediate removal where the cyst contents are infective. In cases where the tumour has been punctured, Flaischlen recommends laparotomy, at the latest on the following day. Rubeska, in remarking on his own case, just mentioned, says that he would extirpate an ovarian tumour, which before reposition was exposed to some hours' pressure, at the end of the first week of the puerperium, and that he would do this even if there were no other indications—suppuration, torsion of pedicle, &c. He postpones operation till the end of a week to ensure that there is no puerperal infection of the uterus.

The conclusions to which a consideration of the subject has led me are that—

1. Where the delivery has been effected by Cæsarean section, the tumour should, if possible, be coincidently removed.

2. Where the cyst contents are proved, or strongly suspected of being infective, or where the tumour has been subjected to long-continued pressure, abdominal ovariotomy should be performed immediately, or within a few hours, after delivery.

3. Where the tumour has been subjected to considerable pressure before reposition, and is believed to be a dermoid, its removal should be effected at the end of the first week of the puerperium.

4. Where reposition has been successful early in labour, or where puncture reveals the tumour to be a simple cyst, expectant treatment should be adopted, but the supervention of severe inflammatory symptoms should at once be followed by laparotomy.

The whole subject of after treatment, however, is still *sub judice*. I trust that the facts which I have had the privilege of presenting to the Society may elicit expressions of opinion which will aid in reaching a definite finding.

TABLE I.—*Left to Natural Powers.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
1	Habit, Zeitsch. d. Ges. d'Aerzte, 1860	I	Cystic	Attempted	—	R.	D.	On 8th day after labour tumour found to the right and behind uterus, reaching almost to umbilicus.
2	Lee, Consult. in Midwifery, C.121	VII	Cystic	Not attempted	Very protracted	R.		
3	Fischel, Prager Med. Wochens., 1882	Multi	Cystic	Attempted	7 hours	R.	A.	During attempts at reposition, cyst ruptured into peritoneal cavity. Convalescence afebrile. F. decided on ovariotomy after involution; tumour detected during pregnancy.
4	Milne, Edin. Med. Journ., vol. xx	VI	Cystic	—	Normal	R.	A.	Same patient as II, 7 and 8; tumour so much smaller than in two previous labours that delivery left to natural powers.
5	Adamson, Cincinnat. Lancet and Obs., 1875	I	*Cystic*	Not attempted	About 60 hours	R.	A.	Spontaneous rupture of cyst, with discharge of a quantity of purulent matter; tumour detected before pregnancy. Good recovery.
6	Brewer, Trans. Obs. Soc., vol. xx	III	*Cystic*	ditto	18 hours	R.	D.	Spontaneous rupture. Convalescence protracted. One month after labour passed *per vaginam* ovarian cyst wall. At beginning of labour tumour was not in the pelvis.
7	Cruveilhier et Roux, Puchelt, p. 166	—	*Cystic*	—	—	R.	—	Removed eight years after, having greatly enlarged.
8	Hohl, Archiv f. Gynäkol., Bd. li	V	*Cystic*	—	About 30 hours	R.	D.	Tumour detected during pregnancy; labour at 7th month; uncertain if tumour in pelvis during second stage; found there immediately after; puerperium normal till 7th day, on which successful ovariotomy.

No.	Reference.	Para.	Character of tumour.	Reposition.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
9	Gelstrom, Centralbl. f. Gynäkol., 1889	IV	*Dermoid*	—	8—12 hours	R.	—	During labour tumour markedly congested, passed *in toto* into rectum; removed after ligature of pedicle; convalescence satisfactory.
10	Schamberg, Prager Viertel-jahr., 1858	—	*Dermoid*	Not attempted	Very protracted	D.	D.	Death occurred before delivery accomplished. Sectio showed impacted dermoid.
11	Stadfelt, Det. Mekan. Misfort. under Fodsl., 1872	II	*Dermoid*	Attempted	48 hours	D.	A.	Spontaneous rupture. Death on 4th day from peritonitis due to cyst rupture.
12	Barnes, St. Geo. Hosp. Rep., vol. viii	I	*Dermoid*	—	Protracted	R.	—	Mother died 5½ m. after from suppuration of cyst, which opened *per rectum*; pyæmia.
13	Pagenstecher, Rhein. Monats., 1849	—	*Colloid cyst*	—	—	R.	A.	Subsequent abortion followed by rupture of cyst with discharge of pus.
				PLAYFAIR.				
14	Lee, Case 45	—	—	Not attempted	—	D.	D.	Pains violent; rupture of uterus; child manually delivered with patient in faint and dying state.
15	Davis, Case 33	I	—	ditto	Very protracted	R.	A.	Child small.
16	Park, Case 11	—	—	ditto	60 hours	D.	—	Died 2 days after delivery.
17	Greenhalgh, Case 41	VII	—	—	35 hours	R.	A.	Premature labour induced.
18	Greenhalgh, Case 42	VIII	—	—	13 hours	R.	A.	Same patient as last; spontaneous premature labour.
19	Merriman, Med.-Chir. Trans., x, p. 51; not in	II	Cystic	—	—	R.	D.	Fœtus hydrocephalic. Same patient as VI, 15.

					hours			in pelvis during labour; protracted convalescence with enlargement of tumour.
21	Park, Case 7. Med.-Chir. Trans., ii	I	*Cystic*	Not attempted	24 hours	R.	A.	Same patient as III, 31.
22	Park, l. c.; not in Playfair	II	*Cystic*	ditto	Not stated	R.	—	Same patient as preceding. Delivered of twins at 7th month without much trouble.
23	Meisner, Case 27	III	*Cystic*	ditto	Not stated	R.	D.	Breech presentation; rupture of cyst in taking down feet; good recovery. Same patient as following.
24	Meisner, Case 28	IV	*Cystic*	ditto	Over 72 hours	D.	D.	Cyst twice spontaneously ruptured during pregnancy; arm presentation; failed in attempt to turn; tapped cyst through abdominal wall. Sectio showed cyst contained pus.
25	Davis, Case 34	—	*Cystic*	ditto	Very protracted	R.	D.	Acute inflammatory attack. Died 2 years after in a state of prodigious abdominal enlargement.
26	Ward, Case 49	II	*Cystic*	—	38 hours	D.	D.	Rupture of uterus; forceps afterwards employed; other ovary also cystic.
27	Lachapelle, Case 38	VI	*Cystic*	Not attempted	Not stated	D.	D.	Both ovaries found on section to be much enlarged; recognised during pregnancy.
28	Ashwell, Case 53	IV	*Cystic*	ditto	12 hours	D.	D.	Breech presentation; rupture of cyst during vaginal manipulations. Sectio showed large cyst adherent to vaginal wall; vagina in neighbourhood gangrenous.
29	Langley, Case 54	—	*Cystic*	—	—	R.	A.	
30	Ingleby, Case 18	Multi	*Dermoid*	Not attempted	15 hours	R.	—	Tumour could not be felt after delivery in vagina; ? ruptured.
31	Ingleby, Case 19	Multi	*Dermoid*	ditto	8 hours	D.	—	Same patient. Labour more easy than previous one. Died within a few hours. Sectio showed dermoid containing pus and hair.
32	Greenhalgh, Case 39	I	*Malignant*	ditto	20 hours	D.	D.	Spontaneous premature labour at 8th month; breech presentation.
33	Hewlett, Case 1	VII	*Malignant*	ditto	Over 60 hours	D.	D.	Right ovary, firmly adherent, filled pelvis; left also affected with malignant disease.
34	Schuzer, Case 36	—	*Carcinoma*	ditto	—	R.	D.	Breech presentation; great difficulty with head. Woman died 2 years after. Sectio showed malignant disease.
35	Basc, Case 37	Multi	*Carcinoma*	ditto	Protracted	D.	D.	Breech presentation. Died undelivered. Carcinoma of uterus also found on section.

TABLE II.—*Reposition.*

No.	Reference.	Para.	Character of tumour.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
1	Paletta, Hirsch, Case 53	—	—	—	—	R.	—	Same patient.
2	Paletta, ibid., Case 53	Multi	—	—	—	R.	—	
3	Paletta, ibid., Case 53	Multi	—	—	—	R.	—	
4	Chiari, Klinik Geburtsk.	—	—	—	—	R.	—	Spontaneous reposition.
5	Ramsbotham, Obst. Med. (4th edit.)	—	—	—	Normal	R.	A.	
6	Ramsbotham, ibid.	—	—	—	Normal	R.	A.	
7	Milne, Edin. Med. Journ., vol. xx	IV	—	—	4—6 hours	R.	A.	Tumour large and fluctuating. Same patient as I, 4.
8	Milne, ibid.	V	—	—	Normal	R.	A.	Same patient; tumour one half the size.
9	Fischel, Prager Med. Wochenschr., 1882	I	—	In knee-elbow position	12—14 hours	R.	A.	Tumour detected in pelvis 3 weeks before labour.
10	Breit, Jetter, p. 23	—	Cystic	—	—	D.	—	Tumour in pelvis only during 3rd stage; reposed before removal of placenta. Died of puerperal fever during an epidemic.
11	Valenta, Mem. Heibrom., 1889	—	Cystic	—	Normal	R.	A.	Good recovery.
12	Lomer, Archiv f. Gynäk., 1882	IV	Cystic	In knee-elbow position	10 hours after reposition	R	A.	Tumour posterior and left; after 2nd stage tumour prolapsed and prevented delivery of placenta till again reposed. Convalescence normal.

13	Camden, Med. and Surg. Rep., Phil., 1871	IV	Cystic	—	12 hours	D.	A.	Tumour reposed only after frequent unsuccessful attempts. Death on 17th day, tumour meantime enlarging in abdomen.
14	Kidd, Dublin Quart. Journ., 1870	—	Cystic	*Per rectum* by Barnes' bags in knee-elbow position	—	R.	A.	At beginning of labour tumour at brim; after rupture of membranes pressed tightly into pelvis.
15	Thompson, Amer. Monthly, 1845	V	Cystic	—	Over 60 hours	R.	D.	Same patient as III, 2. Three intervening labours without trouble. Resolved to puncture, but delayed in absence of urgent symptoms, though labour had lasted nearly 60 hours; tumour accidentally dislodged; child decomposing. Good recovery.
16	Braun, Wiener med. Wochenschr., 1859	I	Cystic	—	15½ hours	R.	D.	
17	Braun, ibid.	I	Cystic	—	24 hours	R.	A.	
18	Jeafferson, Trans. Prov. Med. & S. Assoc.	—	*Cystic*	—	—	R.	A.	Two and a half years after delivered without difficulty; but thereafter so rapid enlargement that ovariotomy on 4th day of puerperium; successful.
19	Riva, Gaz. Med. Lombard, 1852	—	—	Turning	—	R.	—	
20	Atthill, Brit. Med. Journ., 1880	VII	*Cystic*	—	18 hours	D.	Twins A. A.	Eclampsia early in labour. Death a few hours after labour, due to eclampsia.
21	Stubbs, Smellie's Midwifery	I	—	Forceps	24—30 hours	R.	A.	Recovery good save sharp attack of metritis on 2nd day.
22	Hoogeweg, Verhandl. d. Ges. f. Geburt., v Braun, l. c.	—	—	ditto	—	R.	D.	
23		I	Cystic	ditto	48 hours	R.	A.	Tumour prolapsed with forceps, and had again to be reposed.
24	Nathan, Dissert. Inaug., Berlin, 1886	I	Cystic	ditto	20 hours	R.	A.	Reposition effected with considerable difficulty.
25	Atthill, Dub. Med. Journ., vol. lxviii	—	Cystic	ditto	—	R.	A.	Slight peritonitis during first days.

No.	Reference.	Para.	Character of tumour.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
26	Hohl, Archiv f. Gynäk., 1896	I	*Cystic*	Forceps	24 hours	R.	A.	First attempts at reposition seemed to fail, but on examining with a view to puncture, tumour not to be felt. One year after successful removal of ovarian cyst.
27	Fischel, Prager Med. Wochenschr., 1884	VII	*Cystic and hydrosalpinx*	ditto	Over 48 hours	R.	A.	Tumour not in pelvis during first stage; other ovary enlarged in abdomen; on reduction head at once entered pelvis.
28	Hargreaves, Lancet, 1878	II	*Multilocular cyst*	Turning	12—16 hours	R.	—	Cyst enlarged, and was successfully removed about one year after.
29	Bruce, *v. supra*	V	Dermoid	*Per rectum*	18 hours	R.	A.	*V. supra.*
30	Camden, l. c.	IX	*Dermoid*	In knee-elbow-position	24 hours	D.	A.	Several unsuccessful attempts at reposition; successful in knee-elbow position 14 hours after first attempt. Sectio showed tumour ruptured into peritoneal cavity.
31	Hardy, Lancet, 1845	I	*Dermoid*	—	20 hours	R.	A.	Reposition, after several unsuccessful attempts, effected with difficulty by insertion of whole hand into vagina; convalescence normal.
	(Hardy, ibid.	II	*Dermoid*	*Not in pelvis*	Very rapid	D.	A.	Died on 14th day from rupture during labour of cyst occupying abdomen. Sectio showed ruptured dermoid with long pedicle, twisted.
32	Rubeska, Monatschr. f. Geburt. u. Gynäk., 1895	V	*Dermoid*	—	34 hours	R.	A.	Slight phlegmasia; puerperium otherwise normal. Two months after symptoms of rupture; tumour again filled, and 3 months after delivery ovariotomy, but found it impossible to remove adhesions. Abdominal fistula for 5 years. Death from pelvic inflammation 5½ years after delivery.
33	M'Kerron, v. supra	VI	*Dermoid*	Forceps	15 hours	R.	A.	Reposition effected only under deep anæsthesia; *v. supra.*
34	Meyer, Verhandl. d. Ges. f. Geburt., vol. i	I	*Fibroma*	Turning	48—60 hours	R.	D.	
35	Braun, l. c.	I	*Carcinoma*	—	24 hours	D.	D.	Premature labour. Death on 9th day from peritonitis.

36	Merriman, Case 4	III	—	—	Over 24 hours	R.	A.	Good recovery, and remained in good health.
37	Lever, Case 14	Multi	—	—	6 hours	R.	A.	Good recovery. In two previous labours premature labour at 7th month for tumour on left side.
38	Ramsbotham, Case 52	—	—	Craniotomy	—	R.	D.	Perforation after child's death; tumour had disappeared.
39	Behrend, Case 25	II	*Cystic*	—	—	R.	A.	Three years after a third labour; thereafter rapid increase of tumour, which was successfully removed by abdominal section.
40	Lever, Case 13	I	*Cystic*	—	Over 24 hours	R.	A.	Tumour detected 4 months before pregnancy; convalescence febrile; tumour enlarged during lactation. Paracentesis 11½ months, death 2½ years, after delivery.
41	Baudelocque, Case 30	—	*Dermoid*	Turning	Very protracted	D.	D.	Tumour thought to be an exostosis; it slipped up accidentally during attempts to turn.

TABLE III.—*Puncture or Incision.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
							Mother.	Child.	
1	Fochier, Lyon Med., 1878	—	Cystic	—	—	—	R.	A.	
2	Thompson, l. c.	I	Cystic	Not attempted	—	—	R.	D.	Same patient as II, 15.
3	Martin, Zeitsch. f. Geb. u. Frauenkr., Bd. i, H. 1.	—	—	Attempted	Puncture, followed by incision	—	D.	D.	Puncture proved futile; incision through vaginal fornix, followed by speedy delivery. Death on following day.

No.	Reference.	Para.	Character of tumour.	Reposition.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
							Mother.	Child.	
4	Oldham, in Jetter, p. 24	—	Cystic	—	—	—	R.		
5	King, Trans. Amer. Gynecol. Soc., vol. xviii	VII	*Cystic*	Not attempted	Punctured *per rectum*	Over 48 hours	R.	D.	Six weeks after, fever, emaciation; suppuration of cyst, which burst *per rectum*; opened, drained. Complete recovery.
6	Nathan, Diss. Inaug., Berlin, 1886	VII	*Cystic*	ditto	F. before and after puncture; craniotomy	Protracted	D.	D.	Puncture yielded only a little blood. Sectio showed rupture of cyst into peritoneal cavity; pedicle twisted.
7	Lomer, l. c.	IV	*Cystic*	Partially reposed	Forceps	9½ hours	R.	A.	Two thirds of cyst reposed, but prolapsed on traction with forceps. Convalescence afebrile.
8	Lomer, l. c.	VI	*Cystic*	Attempted	ditto	20 hours	R.	A.	? Parovarian. Convalescence afebrile.
9	Kerswell, Brit. Med. Journ., 1880	III	*Cystic*	Not attempted	ditto	About 12 hours	R.	A.	Tumour detected about 18 months before delivery. Ten days after passed *per vaginam* complete thick-walled cyst with 2 in. of pedicle attached.
10	Fischer, Zeitsch. Wind. u. Geburt., 1870	Multi	*Cystic*	—	ditto	—	R.	D.	Rapid convalescence. Subsequent confinements normal.
11	Kinney, Detroit Lancet, 1883-4	I	*Cystic*	Not attempted	ditto	18 hours	D.	D.	Labour at 8½ months as result of eclampsia. Death due to eclampsia. Sectio showed sac of left ovarian cyst distended with air; right ovarian cyst as large as fœtal head.
12	Kinney, ibid.	I	*Cystic*	ditto	ditto	—	R.	A.	Eclampsia during labour. On puncture 5 pints of fluid, though tumour described as hard and firm. Good recovery.
13	Hardwicke, Lancet, 1863	V	*Cystic*	ditto	ditto	—	R.	A.	Forceps applied immediately after puncture, as patient exhausted.

	d. Geburt. u. Gynäk.								
15	Elkington, Brit. Rec. Obst. Med., 1848	—	*Cystic*	—	F. followed by craniotomy	72 hours	R.	D.	Protracted convalescence from inflammatory attack; cyst refilled.
16	Edwards, Prov. Med. Journ., 1842	I	*Dermoid*	Not attempted	Foot taken down	26 hours	D.	D.	Breech presentation. Two years before treated for small right ovarian tumour. Two cysts opened, hair and pus in both.
17	Lewis, Med. Exam. Phil., 1849	II	*Dermoid*	Attempted	Punctured *per rectum*	4—6 hours	R.	A.	Good recovery.
18	Barnes, l. c.	I	*Dermoid*	—	Incision	—	R.	—	Suppuration of tumour, which ultimately shrank under treatment with iodine injections.
19	Byford, Trans. Illinois Med. Soc., 1859	III	*Dermoid*	Not attempted	—	Over 24 hours	R.	A.	Puncture delayed, in hope that spontaneous rupture would take place, till patient and uterus exhausted. Three and a half months after tumour had refilled.
20	Becking, Weekbl. v. Geneesk., 1897	I	*Dermoid*	Attempted	—	—	R.	A.	Thick red-brown fluid on puncture; enlargement of tumour with fever during puerperium; removal of dermoid, completely adherent, in 4th week.
21	Wheelhouse, Brit. Med. Journ., 1868	I	*Dermoid*	ditto	Craniotomy	—	R.	D.	Tumour detected several years before. "Long in critical condition, but ultimately seemed to recover in some measure from the effects of her confinement."
22	Hirst, Med. News, Phil., 1890	II	*Dermoid*	Not attempted	Forceps	—	R.	D.	Tumour detected several months before. Labour induced at 8½ months; gangrene of cyst and peritonitis; successful laparotomy during 3rd week.
23	Wiart, Archiv. de tocol., 1882	—	*Dermoid*	ditto	F. both before and after puncture	12 hours	R.	D.	Peritonitis in 2nd week; tumour filled up, burst frequently *per rectum*. In 6th week discharge of dermoid cyst wall *per anum*.

No.	Reference.	Para.	Character of tumour.	Reposition.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
							Mother.	Child.	
24	Hohl, Archiv f. Gynäkol., 1896	IV	*Dermoid*	Under chloroform partly reduced	F. before puncture	12 hours	R.	A.	Two hours after delivery ovariotomy; free fluid mixed with dermoid contents in abdominal cavity; tumour adherent to pelvic peritoneum; evidence of tearing of adhesions during labour.
25	Ostermayer, Centralbl. f. Gynäkol., 1897	VII	*Dermoid*	Attempted	Incision; craniotomy	Over 40 hours	R.	D.	*V. supra.*
26	Biernacki, Diss. Berlin, 1887	I	*Dermoid*	Not attempted	F. followed by craniotomy	Over 24 hours	R.	D.	Suppuration of cyst with elevation of temperature for 59 days.
27	Fischer, Prager Med. Wochenschr., 1893	IV	*Dermoid*	Attempted	Craniotomy	—	R.	D.	Tumour not to be felt after labour. Seven weeks after enlarged, giving great trouble. Removed by laparotomy.
28	Barnes, l. c.	III	*Dermoid*	—	Forceps	—	R.	A.	Puncture first *per vaginam*, then forceps; thereafter puncture *per rectum* with evacuation of 1½ pints. Good recovery.
29	Litzmann, Deutsche Klinik, 1852	III	*Dermoid*	Attempted	ditto	34 hours	R.	D.	Symptoms of severe peritonitis during puerperium.
30	Ruge, Berl. klin. Wochenschr., 1878	III	*Dermoid*	—	ditto	—	D.	A.	Health good till 7th day, then suppuration of cyst. Ovariotomy on 11th day. Death 2 days after.
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31	Park, Case 8	Multi	*Cystic*	Not attempted	—	Over 30 hours	R.	A.	Same patient as I, 21. Slow recovery; fever extending over several weeks.
32	Park, Case 10	1	*Cystic*	ditto	—	60 hours	R.	D.	Eight hours of strong pains after puncture. Fairly satisfactory recovery.

33	Park, Case 12	I	Cystic	ditto	Craniotomy	48 hours	R.	D.	Ovarian origin doubtful; only blood on puncture, but sufficient diminution to allow head to descend.
34	Denman, Case 23	—	Cystic	ditto	—	—	R.	A.	
35	Jackson, Case 24	II	Cystic	Attempted	—	—	R.	D.	Breech presentation; ? ovarian.
36	Moorman, Case 50	IV	Cystic	ditto	Punctured *per rectum*	—	R.	A.	Tumour detected in left hypogastrium a year before first pregnancy, but three labours without inconvenience; pus-like fluid on puncture; slight peritonitis during puerperium.
37	Perfect, Case 44	—	—	—	—	—	R.	D.	
38	Beclard, Case 26	—	—	Not attempted	Turning	—	D.	D.	
39	Ingleby, Case 20	I	*Cystic*	Attempted	Craniotomy	68 hours	R.	D.	Tumour felt like cartilage; perforation on account of child's death but 8 hours after puncture. Good recovery.
40	Ingleby, Case 21	Multi	*Cystic*	—	Forceps	14 hours	R.	A.	Tumour supposed to be solid, but yielded 8—10 oz. serous fluid. Convalescence good.
41	Lever, Case 17	V	*Dermoid*	Not attempted	—	22 hours	R.	A.	Convalescence unsatisfactory. Three weeks after tumour had refilled.
42	Merriman, Case 3	I	*Dermoid*	—	Craniotomy	Over 40 hours	R.	D.	"Tedious recovery, if indeed it could be called a recovery." Died 1¼ years after from chronic peritonitis; ovary only the size of a lemon.
43	Merriman, Case 6	I	*Dermoid*	Not attempted	ditto	53 hours	D.	D.	After puncture left to natural powers for over 16 hours before perforation.

TABLE IV.—*Turning.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
1	Ayrolles, Ann. de Gynécol., 1885	—	Cystic	Attempted	—	R.	A.	Turning effected with difficulty; as head traversed pelvis, tumour said to have slipped above brim.
2	Crosse, Midwifery Cousult. Practice	—	—	Not attempted	—	R.	A.	
3	Giffard, Med.-Chir. Trans., vol. x, p. 73	—	—	—	—	R.	D.	
4	Doeveron, ibid.	—	—	—	—	D.	D.	
5	Copeman, Trans. Obst. Soc., vol. xii	V	—	Not attempted	30 hours	D.	D.	
6	Elkington, Brit. Rec. Obst. Med., 1848	—	—	—	About 36 hours	R.	D.	Slow convalescence, tumour remaining tender and painful for 3 weeks.
7	Elkington, Trans. Birmingham Path. Soc.	—	—	Not attempted	Over 24 hours	D.	—	Shoulder presentation.
8	Milne, l. c.	VII	Cystic	Attempted	—	R.	—	Detected in pelvis early in pregnancy, reposed; in front of head during labour; reposed under anæsthesia, but could not be kept up; peritonitis during puerperium.
9	Watson, Merriman, Med.-Chir. Trans., vol. x	—	*Cystic*	—	Protracted	D.	D.	Delivery effected with greatest difficulty; woman died next day. Sectio showed large dropsical ovary in pelvis.
10	Charles, Liege Journ. d'Accouch., 1883	I	*Cystic*	—	—	R.	A.	Cyst large and partly in abdomen.

								bilicus. Sectio showed suppurating multilocular cyst.
12	Lomer, Deutsche med. Wochenschr., 1890	II	*Cystic*	ditto	Over 80 hours	D.	D.	Contracted pelvis diagnosed; after 80 hours uterus as thin as paper; os half dilated, membranes intact; version difficult; died with head undelivered. Sectio showed tumour adherent all round.
13	Reynolds, Med. and Surg. Journ., 1892	II	*Dermoid*	Attempted	Over 30 hours	R.	D.	Tumour could not be detected after labour either *per vaginam* or by abdomen; febrile puerperium; removed several months after.
14	Lefholz, Dissert. Inaug., Halle, 1881	II	*Dermoid*	Not attempted	24 hours	R.	D.	Tumour detected size of child's head 2 years before; not to be felt after labour, supposed to have ruptured into abdominal cavity; severe attack of peritonitis.
15	Lefholz, ibid.	III	*Dermoid*	ditto	14 hours	R.	A.	Turning immediately after rupture of the membranes owing to prolapse of the cord; puerperium normal.
16	Griffith, Trans. Obst. Soc., vol. xxxiii	IV	*Fibroma*	ditto	12—15 hours	D.	D.	From firmness and shape of tumour in pelvis it was thought to be head of extra-uterine fœtus; craniotomy first attempted.

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17	Moreau, Case 31	Multi	—	—	—	R.	D.	In attempting version tumour slipped above brim, but on traction again prolapsed.

TABLE V.—*Forceps.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
1	McClintock, N. Syd. Soc.	Multi	Cystic	Attempted	30 hours	R.	A.	Tumour so tender that attempts to dislodge had to be abandoned. Disappearance of tumour after 2nd stage had lasted 8 hours—probably ruptured.
2	Braun, l. c.	I	Cystic	ditto	12 hours	D.	D.	Died of peritonitis.
3	Hunt, Lancet, 1846	—	*Cystic*	Not attempted	Protracted	R.	—	Subsequent enlargement of cyst.
4	Luschka, Sucro, Dissert. Tübing., 1864	IV	*Cystic*	ditto	ditto	D.	—	Tumour prolapsed through vulva with removal of placenta; cut off on 2nd day. Death on 7th day. At sectio other ovary found enlarged and cystic.
5	Kiwisch, Klinik Vorträge, Bd. ii	—	*Dermoid*	—	—	D.	—	Rupture of cyst during traction with the forceps.
6	Jobert, Gaz. Med., No. 25	IX	*Dermoid*	—	—	R.	D.	Extirpation after puerperium.
7	Martens, Norsk. Mag. f. Laegevid., 1871	III	*Dermoid*	—	72 hours	D.	—	Death 2 days after from peritonitis due to cyst rupture.
8	Besnier, Gaz. Med., No. 10	—	*Dermoid*	—	—	R.	—	Tumour afterwards successfully removed.
9	Lomer, l. c.	V	*Dermoid*	Not attempted	30 hours	R.	D.	After long strong efforts with forceps tumour slipped out of vagina and was spontaneously detached. Convalescence protracted.
10	Moeller, Dissert., Berlin, 1869	Multi	*Dermoid* of both ovaries	Attempted	—	D.	A. A.	Died of peritonitis on 3rd day. Pelvic tumour size of apple; pedicle found twisted; right ovary in abdomen size of child's head.
11	Melion, Oest. med. Wochens., 1844	I	*Fibro-cystic*	—	Protracted	D.	D.	Tumour observed 11 years before; only partly in pelvis. Rupture of cyst during traction with forceps, with discharge of contents *per vaginam*.

12	Berry, Case 57	X	Cystic	Not attempted	24 hours	R.	D.	Laceration of vagina; tumour a few hours after labour passed through the rent and removed by ligature.
13	Hüfer, Case 35	I	*Dermoid*	—	72 hours	D.	D.	Sectio showed both ovaries markedly enlarged and adherent to surroundings; right in pelvis.
14	Headland, Case 51	I	*Carcinoma of both ovaries*	—	28 hours	D.	A.	Spontaneous rupture of tumour 24 hours before delivery; tumour of left ovary recognised two or three years before. Sectio showed left ovary size of cocoanut; right larger, filling pelvis.

TABLE VI.—*Craniotomy.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
1	Nathan, l. c.	I	—	Attempted	32 hours	R.	D.	Perforation effected with difficulty; rupture of lower uterine segment; febrile puerperium.
2	Lee, Consultation Midwifery, Case 135	I	—	Not attempted	24 hours	R.	D.	Cæsarean section thought at first to be necessary; after labour tumour scarcely to be felt. Favourable recovery.
3	Lee, ibid., Case 121	VII	—	ditto	"Very protracted"	R.	D.	Same patient. Tumour small and not increased in size in second labour. Recovery in both cases favourable.
4	Lee, ibid., Case 122	VIII	—	ditto	—	R.	D.	
5	Lee, ibid., Case 296	I	—	—	16 hours	R.	D.	Prolapse of cord and death of child before perforation. Recovery favourable.
6	Baader, Schmidt's Jahrb., 1876	I	*Dermoid*	—	—	D.	D.	Unsuccessful attempts with forceps. Death on 5th day, due to rupture of cyst. Doubtful if in pelvis during labour, though on section in Douglas's pouch, long-pedicled, non-adherent.
7	Chiari, Klinik d. Geburt. u. Gynäk.	—	*Dermoid* of both ovaries	—	—	D.	D.	Forceps first tried. Died on 14th day from peritonitis.

No.	Reference.	Para.	Character of tumour.	Reposition.	Duration of labour.	Result.		Remarks.
						Mother.	Child.	
8	Merriman, Case 2	II	*Cystic*	Not attempted	50 hours	D.	Twins D. D.	Died on 4th day. Sectio showed tumour in a high state of inflammation and containing blood-clot.
9	Park, Case 9	—	Cystic	ditto	—	R.	D.	Tumour not to be felt after delivery; thought to have ruptured. Further labours without trace of tumour.
10	Stein, jun., Case 32	I	Cystic	ditto	—	R.	D.	Tumour found partially in pelvis 4 months before; reposed; again in pelvis during labour, and as child dead, perforation.
11	Lee, Case 46	—	*Malignant*	ditto	9 hours	D.	D.	Both ovaries affected. Death occurred 4½ months after delivery.
12	Lee, Case 47	—	Large, filling hollow of sacrum	ditto	—	R.	D.	
13	Lee, Case 48	Multi	ditto	ditto	24 hours	D.	D.	Same patient as last.
14	Playfair, Case 55	I	—	ditto	Over 30 hours	D.	D.	Extraction, after perforation, effected with greatest difficulty; on head being delivered tumour slipped up into abdomen. Death on 3rd day from peritonitis.
15	Merriman, Case 5	III	—	ditto	90 hours	R.	D.	Same patient as I, 19. Delivery completed 41 hours after perforation. "Remained for a long time in a state of extreme danger."
16	Denman, Case 22	—	*Dermoid*	ditto	Protracted	D.	D.	
17	Herbinaux, Case 29	I	*Dermoid*	—	—	R.	D.	A few days after delivery rupture of cyst and discharge of pus and hair *per vaginam*.
18	La Chapelle, Case 43	—	*Fibroma*	Not attempted	—	D.	D.	After birth tumour projected through anus and was removed.

TABLE VII.—*Cæsarean Section.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
							Mother.	Child.	
1	Godefroy, Gaz. Obst. et Gynécol., 1875	V	*Cystic* and *Dermoid*	Attempted	Puncture *per vagin.*; ovariotomy	About 72 hours	D.	A.	Both ovaries in pelvis; right cystic, left dermoid.
2	Staude, Zeits. f. Geburt. u. Gynäk., 1895	I	*Cystic*	ditto	Removal of uterus and annexa	Over 72 hours	R.	A.	Enlargement of other ovary to size of an apple; on this account, and owing to atony, uterus removed. Good recovery.
3	Mayo Robson, Brit. Med. Journ., 23rd Oct., 1897	I	*Cystic*	—	ditto	Not begun	R.	A.	Operation at term, but before onset of labour owing to suppuration of cyst with high temperature; woman extremely ill; abdomino-pelvic abscess; cyst full of pus. Excellent recovery.
4	Kob, Beiträge zur Geburt. u. Gynäk., 1873	II	*Colloid cyst*	Not attempted	Repeated puncture of tumour	—	D.	A.	Tumour recognised during pregnancy and punctured in 9th month.
5	Maigne, Schmidt's Jahrb., 1841	II	*Dermoid*	ditto	—	50 hours	D.	D.	Operation 30 hours after discharge of liquor amnii; woman much exhausted. Sectio showed tumour non-adherent and pedunculated. Diagnosed extra-uterine pregnancy.
6	Lyon, Monthly Journ., 1845	I	*Dermoid*	Attempted	—	Over 60 hours	D.	A.	Operation 30 hours after rupture of membranes. Sectio showed tumour adherent in pelvis and only to be dislodged by great force.

No.	Reference.	Para.	Character of tumour.	Reposition.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
							Mother.	Child.	
7	Malgaigne, Archiv. Gen., Juin, 1844	I	*Fibroma*	Not attempted	Exploratory puncture *per rectum*	Over 72 hours	D.	D.	Very strong pains for 30 hours before operation. Sectio showed no pelvic adhesions.
8	Kleinwachter, Archiv f. Gynäk., Bd. iv	I	*Fibroma*	ditto	—	Over 48 hours	D.	A.	Patient exhausted, pulse 100, temperature elevated; tumour thought to be pelvic exostosis. Sectio showed ossified fibroma, non-adherent and easily elevated.
9	Lahs, Deutsche med. Wochenschr., 1878	III	*Cysto-sarcoma*	Attempted	—	6—8 days	D.	D.	Tumour detected 1½ years before in pelvis; pains after 8 days of activity suspended; os fully dilated; lower uterine segment threatening rupture, though membranes intact.
					PLAYFAIR.				
10	Greenhalgh, Case 40	X	*Carcinoma*	—	—	16 hours	D.	D.	Death from exhaustion some hours after operation.

TABLE VIII.—*Abdominal Ovariotomy.*

No.	Reference	Para.	Character of tumour.	Duration of labour.	Result.		Remarks.
					Mother.	Child.	
1	Williams, Cavendish Lect., 1897	—	*Cystic*	About 14—16 hours	R.	D.	Tumour found occupying pelvis early in labour. Abdomen opened in belief that extra-uterine fœtation; fœtus *in utero* and cyst occupying pelvis; tumour could not be elevated till emptied *per vaginam*; labour pains recurred directly after operation; delivery completed by forceps 11 hours after. Good recovery.
2	Williams, ibid.	Multi	*Colloid cyst*	12—15 hours	R.	A.	Tumour occupied right side of pelvic inlet, pushing head to left iliac fossa; ovariotomy 4 years before; when first seen os fairly dilated; operation within a few hours of beginning of labour; delivery completed by forceps 6 hours after. Good recovery.

TABLE IX.—*Vaginal Ovariotomy.*

No.	Reference.	Para.	Character of tumour.	Reposition.	Auxiliary treatment.	Duration of labour.	Result.		Remarks.
							Mother.	Child.	
1	Rubeska, Monatsch. f. Geburt. u. Gynäk., 1895	VII	*Cystic*	Attempted	Small abdominal incision	26 hours	R.	A.	As unable to reach upper limit of tumour, small abdominal incision made; tumour contained 3 litres of slightly purulent serous fluid; puerperium normal till 18th day, when fever and refilling of tumour, for which successful operation.
2	Staude, Zeitsch. f. Geburt. u. Gynäk., 1895	Multi	*Cystic*	ditto	Forceps	—	R.	A.	Puncture and small incision failed to diminish the tumour, which still size of two fists; unable from descent of head to suture vaginal wound till completion of labour. Good recovery.
3	Rapin and Ceresolè, Rev. Med. de la Suisse, 1896	—	*Cystic adenoma*	ditto	Preceded by puncture	16 hours	R.	A.	Cystic adenoma of Rosenmüller's tubes; puncture yielded only blood; then incision, through which pedunculated tumour projected; snipped off and pedicle returned.

The discussion on this paper was adjourned till the next meeting.

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